

DAN MORRIS

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<https://dmorris.net>



RESEARCH AREAS

AI tools for conservation and sustainability
Applied DSP and machine learning for interactive systems
Wearable health and fitness sensing
Input devices, multimodal interfaces, haptics
Computer music, creativity support tools for music
Neural interfaces, neurophysiology, medical devices

EDUCATION

Stanford University, PhD in Computer Science	2006
Stanford University, MS in Computer Science	2003
Brown University, BS in Neuroscience	2000

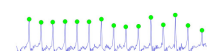
AWARDS

Best Talk ("Recognizing Repetitive Exercises"), ACM CHI 2014	2014
Best Paper ("No Such Thing as Gaining a Pound"), ACM Ubicomp 2012	2013
Best Paper ("Low-Power Motion Sensing"), ACM Ubicomp 2012	2012
Best Paper Nomination ("Humantenna"), ACM CHI 2012	2012
Best Paper ("Your Noise is My Command"), ACM CHI 2011	2011
Best Paper Nomination ("ClassSearch"), ACM CHI 2011	2010
Best Paper ("Skinput"), ACM CHI 2010	2010
Best Paper Nomination ("Patient-Centric Displays"), ACM CHI 2010	2010
Best Paper ("Haptic Guidance"), IEEE World Haptics 2007	2007
National Defense Science and Engineering Graduate Fellowship	2001
National Science Foundation Graduate Fellowship	2000

PROFESSIONAL EXPERIENCE

Google AI for Nature <i>Senior Staff Research Scientist</i>	2021-
Microsoft AI for Earth <i>Principal Scientist, Program Director</i>	2018-21
Microsoft Research <i>Principal Researcher</i>	2006-

University of Washington, Department of Computer Science and Engineering <i>Affiliate Professor</i>	2011-18
Stanford University, Department of Computer Science <i>PhD Student</i> Haptics and deformable tissue modeling for surgical simulation Simulation of temporal bone and craniofacial surgery	2001-6
Cyberkinetics Neurotechnology Systems <i>Systems Engineer</i> Developed a system for real-time neural decoding, experimental design and control, and data acquisition. Used in clinical trials for a neural prosthetic device for paralyzed patients.	2002-6
Hansen Medical <i>Consulting Engineer</i> Image analysis for image-guided robotic catheter control	2004
Brown University Neuroscience Department, Multichannel Recording Lab <i>Consulting Engineer</i> Developed a platform for intraoperative experiments in which patients undergoing stimulator implant surgery controlled an on-screen cursor via cortical electrodes.	2002
Cereon Genomics <i>Research Intern</i> Developed algorithms to estimate alternative splicing prevalence in Arabidopsis ESTs.	2001
Tiqit Computers <i>Computer Engineer</i> Component selection, hardware prototyping, Linux/Windows applications, device drivers, and firmware for an x86 handheld	2000
Brown University Computer Science Department, Graphics Lab <i>Independent Research Project</i> Developed software for visualization and analysis of multi-valued fluorescence images diffusion-tensor MR images.	2000
Brown University Neuroscience Department, Multichannel Recording Lab <i>Independent Research Project</i> Developed hardware and software for control of a robotic arm via multi-electrode neural recordings. Studied the role of correlated neural activity in motor skill learning.	1998
National Institutes of Health, Laboratory of Neuropsychology <i>Research Intern</i> Developed data acquisition and analysis software. Explored the neural basis for visual attention via single-electrode recordings.	1999
Yale University Section of Cardiology, Diagnostic Imaging Lab <i>Research Intern</i>	1997



Analyzed image data to evaluate cardiac function estimation tools.

PRODUCTS AND/OR PRODUCT-LIKE THINGS I WORKED ON

Google Environmental Insights Explorer (Tree Canopy)	2022-
Microsoft Planetary Computer	2020-1
Algorithmic contributions to several Microsoft products, including Bing Visual Search, Microsoft Band, Xbox One Kinect, and Surface Music Kit	2006-24
Microsoft Research Songsmith	2009
Product lead, directed R&D, implemented audio and ML backends	

REFEREED PUBLICATIONS

Sims MJ, Stanimirova R, Raichuk A, Neumann M, Richter J, Follett F, MacCarthy J, Lister K, Randle C, Sloat L, Esipova E, Stanton C, **Morris D**, Slay CM, Purves D, Harris N. Global drivers of forest loss at 1 km resolution. *Environmental Research Letters*, May 2025.

Gadot T, Istrate Ş, Kim H, **Morris D**, Beery S, Birch T, Ahumada J. To crop or not to crop: Comparing whole-image and cropped classification on a large dataset of camera trap images. *IET Computer Vision*. 2024.

Pazos-Outón LM, Vasconcelos CN, Raichuk A, Arnab A, **Morris D**, Neumann M. Planted: a dataset for planted forest identification from multi-satellite time series. In *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium 2024 Jul 7* (pp. 7066-7070). IEEE.

Celis G, Ungar P, Sokolov A, Sokolova N, Böhner H, Liu D, Gilg O, Fufachev I, Pokrovskaya O, Ims RA, Zhou W, **Morris D**, Ehrich D. A versatile, semi-automated image analysis workflow for time-lapse camera trap image classification. *Ecological Informatics*. 2024 Jul 1;81:102578.

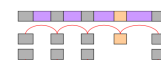
Farrell DM, Ferriss B, Sanderson B, Veggerby K, Robinson L, Trivedi A, Pathak S, Muppalla S, Wang J, **Morris D**, Dodhia R. A labeled data set of underwater images of fish and crab species from five mesohabitats in Puget Sound WA USA. *Scientific Data*. 2023 Nov 13;10(1):799.

Mieloszyk R, Twede H, Lester J, Wander J, Basu S, Cohn G, Smith G, **Morris D**, Gupta S, Tan D, Villar N. A Comparison of Wearable Tonometry, Photoplethysmography, and Electrocardiography for Cuffless Measurement of Blood Pressure in an Ambulatory Setting. *IEEE Journal of Biomedical and Health Informatics*. 2022 Feb 24.

Cole E, Mac Aodha O, Lorieul T, Perona P, **Morris D**, Jojic N. Multi-Label Learning from Single Positive Labels. *Proceedings of CVPR 2021*.

Kellenberger B, Tuia D, **Morris D**. AIDE: Accelerating Image-Based Ecological Surveys with Interactive Machine Learning. *Methods in Ecology and Evolution*, September 2020.

Norouzzadeh M, **Morris D**, Beery S, Joshi N, Jojic N, Clune J. A deep active learning system for species identification and counting in camera trap images. *Methods in Ecology and Evolution*,



October 2020.

Beery S, Liu Y, **Morris D**, Piavis J, Kapoor A, Meister M, Perona P. Synthetic examples improve generalization for rare classes. *Proceedings of WACV 2020*.

Ortiz A, Robinson C, Hassan M, **Morris D**, Fuentes O, Kiekintveld C, Jojic N. Local Context Normalization: Revisiting Local Normalization. *Proceedings of CVPR 2020*.

Robinson C, Ortiz A, Malkin K, Elias B, Peng A, **Morris D**, Jojic N. Human-Machine Collaboration for Fast Land Cover Mapping. *Proceedings of AAAI 2020*.

Vardoulis O, Saponas TS, **Morris D**, Villar N, Smith G, Patel S, Tan D. In vivo evaluation of a novel, wrist-mounted arterial pressure sensing device versus the traditional hand-held tonometer. *Medical Engineering & Physics*, July 2016, S1350-4533(16)30146-1.

Goel M, Whitmire E, Mariakakis A, Saponas TS, Joshi N, **Morris D**, Guenter B, Gavriliu M, Borriello G, Patel S. HyperCam: Hyperspectral Imaging for Ubiquitous Computing Applications. *Proceedings of ACM Ubicomp 2015*, September 2015. **(Honorable mention)**

Kendall L, **Morris D**, Tan D. Blood Pressure Beyond the Clinic: Rethinking a Health Metric for Everyone. *Proceedings of ACM CHI 2015*, April 2015. **(Honorable mention)**

Beijbom O, Joshi N, **Morris D**, Saponas TS, Khullar S. Menu-Match: Restaurant-Specific Food Logging from Images. *Proceedings of the IEEE Winter Conference on Applications of Computer Vision*, January 2015.

Wander JD, **Morris D**. A combined segmenting and non-segmenting approach to signal quality estimation for ambulatory photoplethysmography. *Physiological Measurement* 35.12 (2014): 2543.

Morris D, Saponas TS, Guillory A, Kelner I. RecoFit: Using a Wearable Sensor to Find, Recognize, and Count Repetitive Exercises. *Proceedings of ACM CHI 2014*, April 2014. **(Best talk award)**

Joshi N, **Morris D**, Cohen M. Interactively Stylizing Camera Motion. *Proceedings of ACM CHI 2014*, April 2014.

Mujibiya A, Cao X, Tan D, **Morris D**, Patel S, Rekimoto J. The Sound of Touch: On-body Touch and Gesture Sensing Based on Transdermal Ultrasound. *Proceedings of ACM Interactive Tabletops and Surfaces (ITS) 2013*, October 2013.

Kay M, **Morris D**, schraefel mc, Kientz J. There's No Such Thing as Gaining a Pound: Reconsidering the Bathroom Scale User Interface. *Proceedings of ACM Ubicomp 2013*, September 2013. **(Best paper award)**

Gupta S, **Morris D**, Patel S, Tan D. AirWave: Non-Contact Haptic Feedback Using Air Vortex Rings. *Proceedings of ACM Ubicomp 2013*, September 2013.

Cohn G, Gupta S, Lee T-J, **Morris D**, Smith J, Reynolds M, Tan D, Patel S. An Ultra-Low-Power Human Body Motion Sensor Using Static Electric Field Sensing *Proceedings of ACM Ubicomp 2012*, September 2012. **(Best paper award)**



Badshah A, Gupta S, **Morris D**, Patel S, Tan D. GyroTab: A Handheld Device that Provides Reactive Torque Feedback. *Proceedings of ACM CHI 2012*, May 2012.

Cohn G, **Morris D**, Patel S, Tan D. Humantenna: Using the Body as an Antenna for Real-Time Whole-Body Interaction. *Proceedings of ACM CHI 2012*, May 2012. **(Best paper nomination)**

Gupta S, **Morris D**, Patel S, Tan D. SoundWave: Using the Doppler Effect to Sense Gestures. *Proceedings of ACM CHI 2012*, May 2012.

Kratz L, Saponas TS, **Morris D**. Making Gestural Input from Arm-Worn Inertial Sensors More Practical. *Proceedings of ACM CHI 2012*, May 2012.

Vardoulakis LP, Karlson A, **Morris D**, Smith G, Gatewood J, Tan D. Using Mobile Phones to Present Medical Information to Hospital Patients. *Proceedings of ACM CHI 2012*, May 2012.

Morris D, Fiebrink R. Using Machine Learning to Support Pedagogy in the Arts. *Personal and Ubiquitous Computing*, April 2012.

Harrison C, Tan D, **Morris D**. Skinput: Appropriating the Skin as an Interactive Canvas. *Communications of the ACM* 54.8, August 2011. Wilcox L, **Morris D**, Tan D, Gatewood J, Horvitz E. Characterizing Patient-Friendly “Micro-Explanations” of Medical Events. *Proceedings of ACM CHI 2011*, May 2011.

Moraveji N, Morris M, **Morris D**, Czerwinski M, Riche N. ClassSearch: Facilitating the Development of Web Search Skills through Social Learning. *Proceedings of ACM CHI 2011*, May 2011. **(Best paper nomination)**

Cohn G, **Morris D**, Patel S, Tan D. Your Noise is My Command: Sensing Gestures Using the Body as an Antenna. *Proceedings of ACM CHI 2011*, May 2011. **(Best paper award)**

Wilcox L, Gatewood J, **Morris D**, Tan D, Horvitz E, Feiner S. Physician Attitudes About Patient-Facing Information Displays at an Urban Emergency Department. *Proceedings of AMIA 2010*, November 2010.

Guillory A, Basu S, **Morris D**. User-Specific Learning for Recognizing a Singer’s Intended Pitch. *Proceedings of AAAI 2010*, July 2010.

Tan D, **Morris D**, Saponas TS. Interfaces on the Go: Enabling Mobile Micro-Interactions with Physiological Computing. *ACM Crossroads Magazine*, June 2010.

Wilcox L, **Morris D**, Tan D, Gatewood J. Designing Patient-Centric Information Displays for Hospitals. *Proceedings of ACM CHI 2010*, April 2010. **(Best paper nomination)**

Harrison C, Tan D, **Morris D**. Skinput: Appropriating the Body as an Input Surface. *Proceedings of ACM CHI 2010*, April 2010. **(Best paper award)**

Saponas TS, Tan D, **Morris D**, Turner J, Landay J. Making Muscle-Computer Interfaces More Practical. *Proceedings of ACM CHI 2010*, April 2010.

Benko H, Saponas TS, **Morris D**, Tan D. Enhancing Input on and Above the Interactive Surface with



Muscle Sensing. *Proceedings of ACM Tabletop 2009*, November 2009.

Nichols E, **Morris D**, Basu S, Raphael C. Relationships Between Lyrics and Melody in Popular Music. *Proceedings of the 2009 International Symposium on Music Information Retrieval (ISMIR 2009)*.

Saponas TS, Tan D, **Morris D**, Balakrishnan R, Landay J. Enabling Always-Available Input with Muscle-Computer Interfaces. *Proceedings of ACM UIST 2009*, October 2009.

Grimes A, Tan D, **Morris D**. Technological Support for Family Reflections on Health. *Proceedings of ACM Group 2009*, May 2009.

Fiebrink R, **Morris D**, Morris M. Dynamic Mapping of Physical Controls for Tabletop Groupware. *Proceedings of ACM CHI 2009*, April 2009.

Nichols E, **Morris D**, Basu S. Data-Driven Exploration of Musical Chord Sequences. *Proceedings of Intelligent User Interfaces (IUI) 2009*, February 2009.

Morris D, Simon I, Basu S. Exposing Parameters of a Trained Dynamic Model for Interactive Music Creation. *Proceedings of AAAI (Association for the Advancement of Artificial Intelligence) 2008* (July 13-17, 2008).

Morris D, Morris M, Venolia G. SearchBar: A Search-Centric Web History for Task Resumption and Information Re-finding. *Proceedings of ACM CHI 2008*, April 2008.

Morris D, Brush A.J., Meyers B. SuperBreak: Using Interactivity to Enhance Ergonomic Typing Breaks. *Proceedings of ACM CHI 2008*, April 2008.

Saponas TS, Tan D, **Morris D**, Balakrishnan R. Demonstrating the Feasibility of Using Forearm Electromyography for Muscle-Computer Interfaces. *Proceedings of ACM CHI 2008*, April 2008.

Simon I, **Morris D**, Basu S. MySong: Automatic Accompaniment Generation for Vocal Melodies. *Proceedings of ACM CHI 2008*, April 2008.

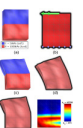
Ruffaldi E, **Morris D**, Barbagli F, Salisbury K, Bergamasco M. Voxel-Based Haptic Rendering Using Implicit Sphere Trees. *Proceedings of the 2008 IEEE Haptics Symposium*.

Morris D and Salisbury JK. Automatic Preparation, Calibration, and Simulation of Deformable Objects. *Computer Methods in Biomechanics and Biomedical Engineering* (Taylor & Francis Press), Vol 11.4, p263-279, 2008.

Sewell C, **Morris D**, Blevins H, Dutta S, Agrawal S, Barbagli F, Salisbury K. Providing Metrics and Performance Feedback in a Surgical Simulator. *Computer Aided surgery* (Taylor and Francis Press), 13:2, p63-81, 2008.

White R, **Morris D**. Investigating the Querying and Browsing Behavior of Advanced Search Engine Users. *Proceedings of SIGIR 2007*, July 2007.

Edmonds A, White R, **Morris D**, Drucker S. Instrumenting the Dynamic Web. *Journal of Web Engineering (JWE)*, Vol. 6, No. 3 (2007), 243-260.



Morris D, Tan H, Barbagli F, Chang T, Salisbury K. Haptic Feedback Enhances Force Skill Learning. *Proceedings of IEEE World Haptics 2007*, March 2007. (Best paper award)

Sewell C, **Morris D**, Blevins N, Barbagli F, T, Salisbury K. Evaluating Drilling and Suctioning Technique in a Mastoidectomy Simulator. *Proceedings of MMVR (Medicine Meets Virtual Reality) XV*, January 2007.

Sewell C, **Morris D**, Blevins N, Barbagli F, T, Salisbury K. Validating Metrics for a Mastoidectomy Simulator. *Proceedings of MMVR (Medicine Meets Virtual Reality) XV*, January 2007.

Morris D, Sewell C, Barbagli F, Blevins N, Girod S, Salisbury K. Visuohaptic Simulation of Bone Surgery for Training and Evaluation. *IEEE Computer Graphics and Applications*, Vol. 26, No. 4, p48-57, November 2006.

Ojakangas CL, Shaikhouni A, Friebs GM, Caplan AH, Serruya MD, Saleh M, **Morris DS**, Donoghue JP. Decoding movement intent from human premotor cortex neurons for neural prosthetic applications. *Journal of Clinical Neurophysiology*, December 2006, Vol 23.6, p577-584.

Ruffaldi E, **Morris D**, Edmunds T, Barbagli F, Pai DK. Standardized Evaluation of Haptic Rendering Systems. *Proceedings of the 14th IEEE Haptics Symposium*, March 2006.

Sewell C, **Morris D**, Blevins N, Barbagli F, Salisbury K. Achieving Proper Exposure in Surgical Simulation. *Proceedings of MMVR (Medicine Meets Virtual Reality) XIV*, January 2006.

Meehan M, **Morris D**, Maurer C, Antony A, Barbagli F, Salisbury K, Girod S. Virtual 3D Planning and Guidance of Mandibular Distraction Osteogenesis. *Computer Aided Surgery* 11.2, p51-62, March 2006.

Morris D, Girod S, Barbagli F, Salisbury K. An Interactive Simulation Environment for Craniofacial Surgical Procedures. *Proceedings of MMVR (Medicine Meets Virtual Reality) XIII*, January 2005.

Sewell C, **Morris D**, Blevins N, Barbagli F, Salisbury K. Quantifying Risky Behavior in Surgical Simulation. *Proceedings of MMVR (Medicine Meets Virtual Reality) XIII*, January 2005

Morris MR, **Morris D**, Winograd T. Individual Audio Channels with Single Display Groupware: Effects on Communication and Task Strategy. *Proceedings of CSCW (Computer-Supported Cooperative Work) 2004*, November 2004.

Morris D, Sewell C, Blevins N, Barbagli F, Salisbury K. A Collaborative Virtual Environment for the Simulation of Temporal Bone Surgery. *Proceedings of MICCAI (Medical Image Computing and Computer-Aided Intervention) VII*, Sep 2004. Springer-Verlag Lecture Notes in Comp Sci, Volume 3217, p319-327.

Sewell C, **Morris D**, Blevins N, Barbagli F, Salisbury K. An Event-Driven Framework for the Simulation of Complex Surgical Procedures. *Proceedings of MICCAI (Medical Image Computing and Computer-Aided Intervention) VII*, Sep 2004. Springer-Verlag Lecture Notes in Comp Sci, Vol. 3217, p346-354.

OTHER PUBLICATIONS



Workshop Papers, Conference Abstracts, and Posters

<http://cs.stanford.edu/~dmorris/publications#conference>

Books and book chapters

Morris D, Joppa L. Computer vision challenges in conservation. Chapter in Conservation Technology (Wich S and Piel A, eds.), Oxford University Press, 2020.

Morris D, Saponas TS, Tan D. Emerging Input Technologies for Always-Available Mobile Interaction. *Foundations and Trends in Human-Computer Interaction*, 4(4), pp. 245-316, November 2011.

Technical Reports

Morris D, Sewell C, Barbagli F, Blevins N, Girod S, Salisbury K. Visuohaptic Simulation of Bone Surgery. Stanford University Department of Computer Science Technical Report 2006-13.

Morris D. Automated Preparation, Calibration, and Simulation of Deformable Objects. Stanford University Department of Computer Science Technical Report 2006-07.

Morris D. Algorithms and Data Structures for Haptic Rendering: Curve Constraints, Distance Maps, and Data Logging. Stanford University Department of Computer Science Technical Report 2006-06.

Morris D and Joshi N. Hybrid Rendering for Interactive Virtual Scenes. Stanford University Department of Computer Science Technical Report 2006-04.

Theses

Morris D. Haptics and Physical Simulation for Virtual Bone Surgery. PhD thesis, Stanford University, August 2006.

Non-Technical

Morris D. "Acoustic Slap Rock." 'Reader's Challenge' lesson in Guitar Player magazine, July 2006, page 124.

PATENTS

Patents Issued

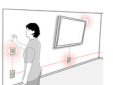
Blood pressure estimation by wearable computing device. Basu S, **Morris D**, Wander J. US Patent 10716518B2. Issued July 2020.

Wrist-Worn Pulse Transit Time Sensor. **Morris D**, Tan D, Saponas TS, Patel S, Villar N, Smith G, Gupta S, Cohn G, Kale D, Malladi S, Paulsen R. US Patent 10709383B2. Issued July 2020.

Enhanced Spatial Impression for Home Audio. Raghuvanshi N, **Morris D**, Wilson A, Rui Y, Tan D, Wing J. US Patent 9560445. Issued January 2018.

Wearable Sensing Band. **Morris D**, Saponas TS, Villar N, Patel S, Smith G, Tan D. US Patent 9848825. Issued December 2017.

Automatic Generation of an Executive Summary for a Medical Event in an Electronic Medical Record.



Morris D, Tan D, Wilcox-Patterson L, Smith G, Karlson A, Roseway A. US Patent 9805160. Issued October 2017.

Dynamic Calibration of an Audio System. Tan D, **Morris D**, Wilson A, Rui Y, Raghuvanshi N, Wing J. US Patent 9729984. Issued August 2017.

Physical Activity Inference from Environmental Metrics. Letchner J, Saponas TS, Brush AJ, Kansal A, **Morris D**. US Patent 9700240. Issued July 2017.

Restaurant-specific food logging from images. Joshi N, Khullar S, Saponas TS, **Morris D**, Beijbom O. US Patent 9659225. Issued May 2017.

Determining Pulse Transit Time Non-Invasively Using Handheld Devices. **Morris D**, Saponas TS, Tan D, Dixon M, Khullar S, Vathsangam H. US Patent 9504391. Issued November 2016.

Interactively Stylizing Camera Motion. Joshi N, **Morris D**, Cohen M. US Patent 9501154. Issued November 2016.

Automatic Exercise Segmentation and Recognition. **Morris D**, Kelner I, Shariff F, Tom D, Saponas TS, Guillory A. US Patent 9174084. Issued November 2015.

Extending Gameplay with Physical Activity Monitoring Device. **Morris D**, Kelner I, Shariff F, Tom D, Saponas TS, Guillory A. US Patent 8951164. Issued February 2015.

Personal Training with Physical Activity Monitoring Device. **Morris D**, Kelner I, Shariff F, Tom D, Saponas TS, Guillory A. US Patent 8951165. Issued February 2015.

Functionality for Normalizing Linguistic Items. Medero J, **Morris D**, Vanderwende L, Gamon M. US Patent Application 20130110497. Issued December 2014.

Doppler-Based User Control Gesture Detection. Tan D, Patel S, **Morris D**, Gupta S. US Patent 8749485. Issued June 2014.

Magnetic Inductive Charging with Low Far Fields. Turner J, Saponas TS, Tan D, **Morris D**. US Patent 8686684. Issued April 2014.

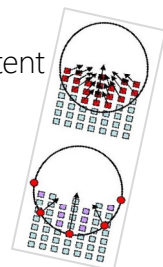
Sensing User Input Using the Body as an Antenna. Tan D, **Morris D**, Cohn G, Patel S. US Patent 8665210. Issued March 2014.

Touch-Sensitive Display Apparatus Using Sensor Input. Benko H, Tan D, **Morris D**, Saponas TS. US Patent 8581856. Issued Nov 2013.

Recognizing Gestures from Forearm EMG Signals. Tan D, **Morris D**, Saponas TS, Balakrishnan R. US Patent 8447704. Issued May 2013.

Sensing Mechanical Energy to Appropriately the Body for Data Input. Tan D, **Morris D**, Harrison C. US Patent 8421634. Issued April 2013.

Mapping of Physical Controls for Surface Computing. Fiebrink R, **Morris D**, Morris M. US Patent 8264455. Issued September 2012.



Wearable Electromyography-Based Controllers for Human-Computer Interface. Tan D, Saponas TS, **Morris D**, Turner J. US Patent 8170656. Issued May 2012.

Search-Centric Hierarchical Browser History. **Morris D**, Morris M, Venolia G. US Patent 8090740. Issued Jan 2012.

Identification and Use of Web Searcher Expertise. **Morris DS**, White RW. US Patent Application 7996400. Issued August 2011.

Patient Training Routine for Biological Interface System. Flaherty JC, Serruya MD, **Morris D**, Caplan AH, Saleh M, Donoghue JP. US Patent 7991461. Issued August 2011.

Automatic Accompaniment for Vocal Melodies. **Morris D**, Basu S, Simon I. US Patent 7705231. Issued July 2011.

Neural Interface System with Embedded ID. Flaherty JC, Capachione LR, **Morris D**, Caplan AH, Saleh M, Guillory KS. US Patent 7751877. Issued July 2010.

Patents Pending

Transfer function for tonometer signals. Wander J, Basu S, **Morris D**. US Patent Application US20180199889A1. Published July 2018.

Machine-learning models for predicting decompensation risk. Basu S, Wander J, **Morris D**. US Patent Application US20180203978A1. Published May 2018.

Transducing Pressure to a Non-Invasive Pulse Sensor. Saponas TS, **Morris D**, Gupta S, Malladi S, Tan D, Villar N, Patel S. US Patent Application 20160287102. Published October 2016.

Sizable Wrist-worn Pressure Sensing Device. Saponas TS, Basu S, **Morris D**, Gupta S, Malladi S, Tan D, Villar N, Patel S, Cohn G, Lester J, Smith G, Paulsen R. US Patent Application 20160287103. Published October 2016.

Wearable Pulse Sensing Device Signal Quality Estimation. **Morris D**, Basu S, Wander J, Smith G, Saponas TS. US Patent Application 20160287110. Published October 2016.

Wearable Pulse Pressure Wave Sensing Device. Saponas TS, **Morris D**, Villar N, Patel S, Smith G, Tan D, Vardoulis O, Gupta S. US Patent Application 20160089042. Published March 2016.

Determining Timing and Context for Cardiovascular Measurements. Saponas TS, **Morris D**, Villar N, Patel S, Smith G, Tan D. US Patent Application 20160089033. Published March 2016.

Video-based Pulse Measurement. **Morris D**, Khullar S, Tan D, Joshi N, Saponas TS. US Patent Application 20150302158. Published October 2015.

Restaurant-Specific Food Logging from Images. Joshi N, Khullar S, Saponas TS, **Morris D**, Beijbom O. US Patent Application 20150228062. Published August 2015.

Privacy Preserving Sensor Apparatus. Rui Y, **Morris D**, Wilson A, Raghuvanshi N, Tan D, Wing J. US Patent Application 20150208233. Published July 2015.

Controlling Automotive Functionality Using Internal- and External-Facing Sensors. **Morris D**, Benko H, Kapur J, Wilson A, Lobb K. US Patent Application 20140005886. Published Jan 2014.

PROFESSIONAL ACTIVITIES

Conference Leadership

Papers and Notes Co-Chair, ACM CHI 2016

Program Committee

ACM CHI 2008, 2009, 2010, 2014 (Papers PC)

ACM CHI 2011, 2012 (Subcommittee Chair for Papers PC)

ACM IHI (Intl Conf on Health Informatics) 2010, 2012 (Papers PC)

ACM Creativity and Cognition 2009, 2011 (Papers PC)

IUI (Intelligent User Interfaces) 2009, 2011 (Papers PC)

ACM UIST 2008, 2009 (Posters chair)

ACM UIST 2008 (Papers PC)

Workshop Organizer

Morris D and Secretan J, workshop at ACM CHI 2009:

Computational Creativity Support: Algorithms and Machine Learning to Help People Be More Creative

Reviewer

Trends in Ecology and Evolution (2024)

Remote Sensing in Ecology and Conservation (2023)

CCAI grants reviewer (2022-)

WACV reviewer (2022)

Global Ecology and Conservation (2022)

Nature Machine Intelligence (2021)

CVPR (2021)

Biological Conservation (2020)

IEEE Technology and Society (2020)

Ecology and Evolution (2019)

PeerJ Life and Environment (2019)

Bloomberg Data for Good Exchange (D4GX) (2019)

IROS (2019)

ICCV Workshop on Computer Vision for Wildlife Conservation (2019)

ACM CHI (2006-2018)

ACM CompaSS (2018)

ACM UIST (2007-2017)

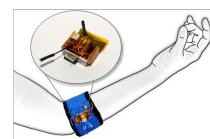
Pervasive Health (2015)

ACM SIGGRAPH Asia (2014)

ACM Transactions on Computer-Human Interaction (2014)

ACM Intl Conf on Ubiquitous Computing (Ubicomp) (2012-2014)

ACM Intl Symp on Wearable Computing (ISWC) (2014)



IEEE Transactions on Biomedical Engineering (2012-2013)
 ACM Computing Surveys (2012)
 ISMIR (International Soc for Music Information Retrieval) (2012)
 Designing Interactive Systems (DIS) (2012)
 IEEE Transactions on Haptics (2008, 2009, 2010, 2011)
 ACM CSCW (Computer-Supported Cooperative Work) (2008, 2011)
 ACM SIGGRAPH (2010)

TEACHING

Stanford University

Instructor for "Introduction to Computer Graphics"	2005
Teaching Assistant for "Introduction to Computer Vision"	2005
Teaching Assistant for "Operating Systems"	2002
Teaching Assistant for "Object-Oriented Systems Design"	2002

Brown University

Head Teaching Assistant for "Introduction to Scientific Computing"	2000
Teaching Assistant for "Introduction to Neuroscience"	1999
Teaching Assistant for "The Foundations of Living Systems"	1999
Teaching Assistant for "Intro to Object-Oriented Programming"	1998
Teaching Assistant for "Introduction to Neuroscience"	1997

MUSICAL EXPERIENCE

Bassist for a Bay-area alt-rock/country band, 2005-2006
 Bassist for a Bay-area top-40 cover band, 2005-2006
 Bass sub experience with several Bay-area rock groups, 2004-2006
 Guitarist for a Seattle-area '80s cover band, 2007-2010
 Recorded/performed with a university a cappella group, 2000-2001
 Vocals/guitar for a performing folk-rock acoustic duo, 2004-2006
 Song selected as garageband.com's "track of the day", 2007

SELECTED PRESS

"Using Artificial Intelligence to Identify Endangered Beluga Whales". NOAA Fisheries News (2020).
 "Developing AI to Find Ice Seals and Polar Bears from the Sky". NOAA Fisheries News (2019).
 "How artificial intelligence is changing wildlife research", National Geographic (2018)
 "Microsoft Band Keeps Fitness Insights a Glance Away", MSFT News (2014)
 "New Tech Allows Gestures Without Camera", KOMO News (2013)
 "Control your laptop with a wave of your hand", CNN Money (2012)
 "Next Up in Kinect-Style Sensing: Ultrasound?", Popular Mechanics (2012)
 "Laptop Uses Sound for Gesture control", Discovery News (2012)
 "Cool MS Research Takes Kinect to Another Level", PC Magazine (2012)



"How to Make a Human Antenna", Discovery News (2011)
 "Sensors turn skin into gadget control pad", BBC News (2010)
 "Microsoft's Skinput turns hands, arms into buttons", CNN (2010)
 "Body Acoustics Can Turn Your Arm Into a Touchscreen", New Scientist (2010)
 "'Skinput' Turns the Body Into an Input Surface", ZDNet News (2010)
 "'Skinput' Turns Your Body Into Touchscreen Interface", TechNews (2010)
 "The Quest for a Better Keyboard", Forbes (2009)
 "Custom Hardware on Surface-style Device", TechFlash (2009)
 "Mixing Real and Virtual Controls", Technology Review (2009)
 "The Songsmith Flap", EQ Magazine (2009)
 "A Look at Microsoft Songsmith", Ars Technica (2009)
 "Microsoft Songsmith Backs Up Your Vocals", PC Magazine (2009)
 "Microsoft's Songsmith makes music using PC", Seattle PI (2009)
 "Microsoft's Songsmith gives singers an algorithmic band", TechFlash (2009)
 "Microsoft releases Songsmith: Karaoke in reverse", CNET (2009)
 "Make Beautiful Music with MySong", Computer Power User (2008)
 "An Algorithm to Turn Melodies Into Songs", IEEE Spectrum (2008)
 "Microsoft creates 'instant backing band' for singers", New Scientist (2008)
 "Pass the Virtual Scalpel, Nurse", Wired News (2006)
 "Controlling movement through thought alone", George St. Journal (2004)
 "Getting a Feel for Surgery", UCSC Science Notes (2004)
 "Fitness Racer: PC Control of an RC Car", Slashdot (2003)
 "Haptic Battle Pong... the Future of Game Interfaces?", Slashdot (2002)
 "Tiqit Handheld PC", Slashdot (2002)
 "Tetris of Titans", Time Magazine (2000)
 "Ultimate Tetris, on a very big screen", New York Times (2000)
 "Tetris takes over tower block", BBC News Online (2000)
 "Brown students create massive Tetris game on building", CNET (2000)
 "The World's Largest Game of Tetris", Slashdot (2000)

LINKS

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