Max Thomas Curran

School of Information

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**Education**

Ph.D., Information Management & Systems Fall 2015 – Spring 2020 (expected)

*School of Information, University of California, Berkeley – Berkeley, CA*

* Focus areas: Digitally-mediated empathy, biosensory computing, human-computer interaction
* Interdisciplinary quantitative & qualitative research methods training
* Selected courses: User Interface Design and Development, Needs and Usability Assessment, Information Visualization and Presentation, Web Architecture, Applied Machine Learning
* Advisor: John Chuang

Certificate, Computer Science Fall 2013 - Spring 2015

*Boston University – Boston, MA*

* Courses: Programming in C++, Data Structures, Discrete Mathematics, Computer Architecture

B.S., Physics and Astronomy Fall 2008 - Spring 2012

*University of Massachusetts, Amherst - Amherst, MA*

* Double major in astronomy and physics, minor in Japanese language and culture
* Graduated Magna Cum Laude with Departmental Honors
* Commonwealth Honors College Scholar with Great Distinction

**Skills**

* User Experience: Experimental design and implementation, qualitative interviewing, survey design, usability testing, contextual inquiry, wireframing & prototyping, affinity diagramming
* Programming: Python (Pandas, Scikit-Learn, SciPy, NumPy), R, HTML/CSS/JavaScript, NodeJS, C++, Unix shell, MatLab, LaTeX
* Software: Unity, Tableau, Adobe Suite, Graphpad Prism, SPSS, REDCap, Solidworks, FSL
* Foreign languages: Japanese (working proficiency), Spanish (elementary proficiency)
* Other: CITI Human Subjects Research certified, certified MRI Scanner

**Research & Teaching Experience**

Graduate Student Researcher August 2015 – Present

*University of California, Berkeley – Berkeley, CA*

* Lead and assist in executing research projects around biosensing, e.g. assessing the potential of ear EEG data for a multi-factor authentication paradigm and building physiological/behavioral profiles using virtual reality for privacy and security related outcomes
* Primary supervisors: John Chuang, PhD, Coye Cheshire, PhD

UX Researcher Intern May 2018 – August 2018

*Facebook – Menlo Park, CA & Seattle, WA*

* Worked closely with product team and other stakeholders planning and carrying out user research to improve product’s foundational information architecture and usability
* Employed survey, usability testing, and interview user research methods
* Communicated findings and recommendations to product team, stakeholders and other UX researchers
* Primary supervisor: Carol Farnsworth

Graduate Student Instructor, “Humans, Sensors, Data, & Apps” August 2016 – December 2016

*University of California, Berkeley – Berkeley, CA*

* Teaching assistant for graduate-level project-based course covering aspects of ubiquitous & biosensing computing, affective computing, signal processing, and user experiments with sensors
* Worked with students to guide month-long projects & provided feedback on assignments
* Guest lecture on “Experimental Design & PsychoPy”
* Held office hours to discuss course material and projects & supervised virtual reality system use
* Primary Supervisor: John Chuang, PhD

Research Assistant July 2016 – September 2016

*Palo Alto Research Center (PARC)* – *Palo Alto, CA*

* Conducted and analyzed interviews with participants around privacy attitudes and thoughts toward advanced internet services that collect and share information about users
* Primary supervisor: Victoria Bellotti, PhD

Technical Assistant June 2013 – July 2015

*Massachusetts General Hospital-Harvard Center for Addiction Medicine – Boston, MA*

* Programmed, tested, and maintained original and existing computer task paradigms in PyGame and PyschoPy for use in and outside of an fMRI environment for multiple research studies
* Performed neuroimaging data analysis including functional connectivity MRI, task-based fMRI, and anatomical MRI using a combination of software tools and shell scripting
* Prepared and analyzed research data for grant applications, publications, and presentations
* Consented and ran study participants through fMRI scan study protocols
* Primary supervisors: Jodi Gilman, PhD, Luke Stoeckel, PhD, and A. Eden Evins, MD, MPH

Research Assistant August 2012 - April 2013

*National Astronomical Observatory of Japan – Nobeyama, Japan & Mitaka, Japan*

* Conducted and analyzed observations of distant galaxy at the Nobeyama 45 meter radio telescope aimed at determining galactic redshifts via blind wideband CO transition searches
* Worked concurrently as a member of the Multi-Color TES (Transition Edge Sensor) Bolometer Camera Team responsible for designing and drafting an optics addition to the testing apparatus
* Primary supervisor: Daisuke Iono, PhD

Undergraduate Honors Capstone Thesis August 2010 - May 2012

*University of Massachusetts Amherst – Amherst, MA*

* Honors thesis entitled “Spatial and Spectral Analysis of Blended Spitzer MIPS and Herschel PACS & SPIRE Counterparts to AzTEC Detected Sources”
* Programmed original routines in IDL to manipulate images and plots, convert coordinates, perform 2-D Gaussian statistics, output results, and be user-friendly for use by other students
* Continued work through summer 2011 Five College Astronomy Department REU Program
* Final thesis recommended and accepted to the university’s student thesis archive
* Primary supervisor: Min S. Yun, PhD

**Grants & Awards**

Best Student Paper Award at the Conference on Physiological Computing Systems 2018

* Awarded for paper titled “Exploring the Feasibility and Performance of One-step Three-factor Authentication with Ear-EEG”

Facebook Research Funding Gift Recipient 2017

* Funding received for proposal titled “Investigating Computer-Mediated Empathy”

National Science Foundation Graduate Research Fellowship Program Honorable Mention 2016

* NSF GRFP proposal titled “Investigating Sensor-Mediated Empathy in Virtual Reality Experiences”

UC Berkeley Center for Long-term Cybersecurity Inaugural Grant Awardee 2016

* BioSENSE research group awarded $100,000 to execute projects about ‘Security and Privacy of Biosensing at Scale’

MGH Clinical Research Day Department Poster Award in Psychiatry 2014

* Awarded for poster titled “Neural Activation to Social Influence in Young Adult Cannabis Users”

Partners in Excellence Team Award 2013

* Awarded as a member of the MGH-Harvard Center for Addiction Medicine in recognition of outstanding performance and commitment to excellence

Massachusetts Space Grant Consortium Funding Award 2011

* Received funding for undergraduate research in the Five College Astronomy Department REU

William F. Field Alumni Scholarship Awardee 2010

* College of Natural Sciences scholarship awarded to an academically distinguished student

**Publications and Presentations**

**Journal Articles & Conference Papers** (#Presenting author(s), \*Authors contributed equally)

**Curran, M.T.#**, Merrill, N., Gandhi, S., Chuang, J. Exploring the Feasibility and Performance of One-step Three-factor Authentication with Ear-EEG. Paper presented at the 5th International Conference on Physiological Computing Systems (PhyCS ’18), September 2018.

Merrill, N.#, **Curran, M.T.**, Chuang, J. Is the Future of Authenticity All in Our Heads?. Paper presented at the New Security Paradigms Workshop (NSPW ‘17), October 2017.

**Curran, M.T.#**, Yang, J., Merrill, N., Chuang, J. Passthoughts Authentication with Low Cost EarEEG. Paper presented at the 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC ‘16), August 2016.

Merrill, N.#, **Curran, M.T.**, Yang, J., Chuang, J. Classifying Mental Gestures with In-Ear EEG. Paper presented at the 13th Annual International IEEE Body Sensor Networks Conference (BSN ‘16), June 2016.

Gilman, J.M., Schuster, R.M., **Curran, M.T.**, Calderon, V., Van der Kouwe, A., Evins, A.E. Neural Mechanisms of Sensitivity to Peer Information in Young Adult Cannabis Users. *Cognitive, Affective, & Behavioral Neuroscience*, April 2016.

Gilman, J.M., **Curran, M.T.**, Calderon, V., Schuster, R.M., Evins, A.E. Altered Neural Processing to Social Exclusion in Young Adult Marijuana Users. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, March 2016.

Gilman, J.M., Treadway, M.T., **Curran, M.T.**, Calderon, V., Evins, A.E. Effect of Social Influence on Effort-Allocation for Monetary Rewards. *PLoS ONE*, May 2015.

Gilman, J.M., Calderon, V., **Curran, M.T.**, Evins, A.E. Young Adult Cannabis Users Report Greater Propensity for Risk-Taking Only in Non-Monetary Domains. *Drug and Alcohol Dependence*, February 2015.

Gilman, J. M., **Curran, M.T.**, Calderon, V., Stoeckel, L.E., Evins, A.E. Impulsive Social Influence Increases Impulsive Choices on a Temporal Discounting Task in Young Adults, *PLoS ONE*, July 2014.

Takuma, I., Kohno, K., Martín, S., Espada, D., Harada, N., Matsushita, S., Hsieh, P., Turner, J. L., Meier, D.S., Schinnerer, E., Imanishi, M., Tamura, Y., **Curran, M.T.**, Doi, A., Fathi, K., Krips, M., Lundgren, A. L., Nakai, N., Nakajima, T., Regan M.W., Sheth, K., Takano, S., Taniguchi, A., Terashima, Y., Tosaki, T., Wiklind, T. Submillimeter ALMA Observations of the Dense Gas in the Low-Luminosity Type-1 Active Nucleus of NGC1097, *Publications of the Astronomical Society of Japan*, October 2013.

**Poster and Oral Presentations**

**Curran, M.T.**#, Merrill, N., Gandhi, S., Chuang, J. One-Step, Three-Factor Authentication in a Single Earpiece. Poster presentation at the International Joint Conference on Pervasive and Ubiquitous Computing (Ubicomp ‘17). Maui, HI. September 2017.

Gilman, J.M., Calderon, V.#, **Curran, M.T.#**, Evins, A.E. Young Adult Cannabis Users Report Greater Propensity for Risk-Taking Only in Non-Monetary Domains. Poster presentation at the Annual Harvard Psychiatry Research Day. Boston, MA. April 2015.

Gilman, J.M., Wighton, P.#, **Curran, M.T.**, Lee, S., Thompson, T., de los Angeles, C.S., van der Kouwe, A., Ghosh, S., Stoeckel, L.E. Modulation of Visual Attention of Blended Faces and Scenes in the FFA and PPA. Poster presentation at the Real-time Functional Imaging and Neurofeedback conference. Gainesville, FL. February 2015.

Wighton, P.#, Gilman, J.M., **Curran, M.T.**, Lee, S., Thompson, T., de los Angeles, C.S., Ghosh, S., Stoeckel, L.E., van der Kouwe, A. Designing a Successful rtfMRI Experiment: Theoretical Considerations. Poster presentation at the Real-time Functional Imaging and Neurofeedback conference. Gainesville, FL. February 2015.

Holsen, L.M.#, Davidson, P., Haimovici, F., Moondra, P., **Curran, M.T.,** Stoeckel, L.E. Mesolimbic and Cognitive Control Circuitry Activity Related to Emotional Eating Behaviors in Pre-Surgical Vertical Sleeve Gastrectomy Patients. Poster presentation at the Obesity Society Annual Meeting at Obesity Week. Boston, MA. November 2014.

Calderon, V.\*#, **Curran, M.T.\*#**, Gilman, J.M., Evins, A.E. Neural Activation to Social Influence in Young Adult Cannabis Users. Poster presentation at the annual MGH Clinical Research Day. Boston, MA. October 2014.

Stoeckel, L.E., Calderon, V.#, **Curran, M.T.#**, Evins, A.E. Assessing Cognitive Regulation of Cigarette Craving to Identify Brain Regions for Real-time fMRI Neurofeedback Training. Poster presentation at the annual MGH Scientific Advisory Committee Symposium. Boston, MA. April 2014.

Stoeckel, L.E.#, Ghosh, S., Keshavan, A., Stern, J.P., Calderon, V., **Curran, M.T.**, Whitfield-Gabrieli, S., Gabrieli, J.D.E, Evins, A.E. The Effect of Real Time fMRI Neurofeedback on Food and Cigarette Cue Reactivity. Poster presentation at the annual meeting of the American College of Neuropsychopharmacology. Hollywood, FL. December 2013.

**Curran, M.T.#** Spatial and Spectral Analysis of Herschel Counterparts to AzTEC Detected Sources. Oral presentation at the annual Five College Astronomy Department Undergraduate Theses Presentations*.* Amherst, MA. May 2012.

**Academic Projects**

The Eyes Have It (or do they?) Team Final Project for Applied Machine Learning course, Fall 2017

* Applied machine learning techniques and algorithms to eye tracking data to investigate the ability to predict demographic and personality characteristics of viewers from this data

Link to project page: https://www.ischool.berkeley.edu/projects/2017/eyes-have-it-or-do-they

HCI in Virtual Reality Team Final Project for Needs and Usability Assessment course, Spring 2017

* Conducted a focus group, usability tests, evaluative interviews, and a competitive review for development of School of Information capstone project *VR the Change*, a virtual reality experience aimed at improving climate change awareness

TrackStream Team Final Project for Web Architecture course, Fall 2016

* Designed and coded a web application using APIs to stream music from movies and TV shows.

Link to final project: http://trackstream.herokuapp.com

SenseShare Independent Final Project for Computer-Mediated Communication course*,* Spring 2016

* Designed a prototype for sharing personal biosignal information and conducted interviews to ascertain attitudes around this practice.

How Many Fish? Team Final Project for Information Visualization & Presentation course, Spring 2016

* Designed and implemented visualization around algorithm transparency in online dating

Link to final project: http://howmanyfish.herokuapp.com

PipPop Team Final Project for User Interface Design & Development, Fall 2015

* Carried out contextual inquiries, prototype iteration, think alouds, heuristic evaluation, and usability experiments for a project intended to ease the process of quickly and easily exchanging contact information between individuals

Link to final prototype: http://share.framerjs.com/9un2gzcsj9z7

**Other Scholarly Activities**

* PhD student representative to UC Berkeley School of Information staff and faculty (2017-2018)
* Reviewer for short paper, IEEE Biomedical Circuits and Systems Conference (BioCAS ’17)
* Reviewer for journal article with John Chuang and Nick Merrill, IEEE Transactions on Information Forensics and Security (TIFS ’17)
* Reviewer for full paper with John Chuang and Nick Merrill, Conference on Physiological Computing Systems (PhyCS ’16)