Max Thomas Curran

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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: Human-computer interaction, biosensing technologies
- Mixed quantitative & qualitative research methods training
- Advisor: Professor 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: Qualitative interviewing, survey design, usability testing, contextual inquiry, field notes, think alouds, prototyping, affinity diagramming
- Programming: Python, R, HTML/CSS/JavaScript, C++, Unix shell, MatLab, LaTeX
- Software: Tableau, SPSS, Adobe Suite, Graphpad Prism, REDCap, Solidworks, FSL, MS Office
- Foreign languages: Japanese (working proficiency), Spanish (elementary proficiency)
- Other: CITI Human Subjects Research certified, Certified MRI Scanner

Academic Projects

HCI in Virtual Reality   Needs and Usability Assessment, Spring 2017

- Conducted user research for development of School of Information MIMS capstone project *VR the Change*, a virtual reality experience aimed at improving climate change awareness

TrackStream   Web Architecture, 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   Computer-Mediated Communication, Spring 2016

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

- Design and implementation of visualization around algorithm transparency in online dating
        Link to final project: http://howmanyfish.herokuapp.com

PipPop   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

Research & Teaching Experience

Graduate Student Researcher   August 2015 – Present
University of California, Berkeley – Berkeley, CA
  – Lead and assist in executing research projects around biosensing such as assessing the potential of ear EEG data for a multi-factor authentication paradigm, examining the longitudinal stability of EEG data, and building physiological/behavioral profiles using virtual reality for privacy and security outcomes
  – Primary supervisors: John Chuang, PhD, Coye Cheshire, PhD

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

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 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
  – Offered technical input in the creation and improvement of new and ongoing research studies
  – 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
  – Assisted in performance and data reduction of distant galaxy observations at the Nobeyama 45 meter radio telescope for an ongoing project 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
   – Worked closely with research advisor to complete a research project and 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

National Science Foundation Graduate Research Fellowship Program Honorable Mention   2016
   – 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 around '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 Awardee   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

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, 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, 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.

Selected Presentations (*Authors contributed equally, [#]Presenting author(s))

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. 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.

Other Activities

- IEEE Biomedical Circuits and Systems Conference (BioCAS '17), short paper review
- IEEE Transactions on Information Forensics and Security, journal article review with John Chuang and Nick Merrill
- Conference on Physiological Computing Systems (PhyCS '16), full paper review with John Chuang and Nick Merrill