John Karasinski

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Education

- **University of California, Davis** **Davis, CA**
  Ph.D. Mechanical and Aerospace Engineering *2013 – Current*
  - Human systems integration and control theory

  M.S. Mechanical and Aerospace Engineering *2013-2016*
  - Real-time performance feedback for the manual control of spacecraft
- **University of California, Santa Cruz** **Santa Cruz, CA**
  B.S. Physics *2008-2012*
  - High-energy astroparticle physics with the Fermi Gamma-ray Telescope

Experience

- **UC Davis Center for Human/Robotics/Vehicle Integration and Performance** **Davis, CA**
  Graduate Student Researcher *2013 – Current*
  - Development and validation of methods to assess task performance in real-time and provide immediate feedback to improve mission outcomes for spaceflight operations
  - Simulation development for the analysis of human performance and human-automation interaction
  - Multiple human subject research campaigns
  - Computer-vision techniques for autonomous spacecraft rendezvous and docking
  - Optimal control theory for spacecraft attitude pointing
- **San José State University Research Foundation** **NASA Ames Research Center, Moffett Field, CA**
  Research Intern *June – September 2016*
  - Designed and built a prototype of a mobile procedure viewer with the goals of reducing execution time, training time, and procedure execution errors for astronauts on the International Space Station
  - Directed design interns on prototyping, usability testing, analysis and feasibility tasks
  - Mentored software development interns learning Arduino, node, and Unity to accomplish tasks
  - Integrated HoloLens augmented reality display and ESP8266 hardware through a MQTT broker
  - Software development with Unity, node, and C++
- **Foodfully, Inc.** **Davis, CA**
  Lead Software Developer *2015-Current*
  - Development of web, iOS, and Android mobile apps to reduce household food waste
  - Full-stack software development in Javascript, Meteor, MongoDB, and React
- **Teachers Curriculum Institute** **Mountain View, CA**
  Software Developer *2013-2015*
  - Development of interactive science curriculum, comprehensive educational suite, and online store
  - Software development in JavaScript, HTML5, and Ruby on Rails
- **Handstand Inc.** **Mountain View, CA**
  Content Administrator *2011 – 2012*
  - Curated and published a library of over 2,000 creative commons and open source textbooks for free use
  - Assisted with the design, creation, and quality assurance of both the mobile and web applications
  - Selected science, technology, engineering, and mathematics (STEM) textbooks for use with Android education application
  - Effectively managed small teams of 3-7 people to complete various start up projects

- **University of California, Santa Cruz** **Santa Cruz, CA**
  Undergraduate Student Researcher *2010 – 2012*
  - Search for 'smoking gun' signatures of dark matter in the galactic center
  - High energy gamma-ray timing analyses with the Fermi Gamma Ray Telescope

  Junior Specialist *2009 – 2010, Balloon Campaigns 2011-13*
  - Computer-aided testing and evaluation of hardware and software for use on both test and final BARREL (Balloon Array for RBSP Relativistic Electron Losses) balloon campaigns
  - Monitored data acquisition and performance of balloons during multiple campaigns to determine the electron loss rate during RBSP relativistic electron events

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Selected Publications

Karasinski, John A, Robinson, S. K., Handley, P., and Duda, K. R., "Real-Time Performance Feedback in a Manually-Controlled Spacecraft Inspection Task," *AIAA Modeling and Simulation Technologies Conference, AIAA SciTech*, 2017.

Karasinski, John Austin, *Real-Time Performance Feedback for the Manual Control of Spacecraft*, Master's thesis, 2016.

Karasinski, John A, Robinson, S. K., Duda, K. R., and Prasov, Z., "Development of real-time performance metrics for manually-guided spacecraft operations," *2016 IEEE Aerospace Conference*, IEEE, 2016, pp. 1–9.

Duda, K., Robinson, S., Prasov, Z., York, S., Handley, P., **Karasinski J**, Tinch, J., and West, J., "Metrics and Methods for Real-Time Task Performance Assessment," *Aerospace Medicine and Human Performance*, Vol. 86, No. 3, March 2015, pp. 207–208.

Duda, K., Robinson, S., Prasov, Z., York, S., Handley, P., **Karasinski J**, Tinch, J., and West, J., "Metrics and Methods for Real-Time Task Performance Assessment," Galveston, TX, January 2015, [Abstract and Poster].

Karasinski, John Austin, *A HIGH ENERGY TIMING ANALYSIS WITH THE FERMI GAMMA-RAY TELESCOPE*, Bachelor's thesis, 2012.

Core Technical Skills

Core Languages: Python, Javascript
Additional Languages: FORTRAN, C++, MATLAB, Simulink, LaTeX, jQuery, Ruby on Rails, HTML5, CSS3
Development Environments: Linux, macOS, Windows, Android, iOS