TREVOR CLARK

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Deep Learning, Computer Vision Self-Guided Learning/Specialization **(Aug 2020 - Present)**

- Deep Learning Specialization (5 courses, taught by Andrew Ng)
- Reinforcement Learning Specialization (4 courses, University of Alberta)
- Computer Vision NanoDegree (Udacity)
- Additional Computer Science Courses (Tensorflow, Machine Learning, Algorithms & Data Structures, etc.)

Intuitive Surgical: Senior Software Engineer **(June 2017 - Aug 2020)**

- Created computer vision software (Cognex) for feature detection / targeting and classification (weld quality assessment) for numerous weld applications
- Wrote automation workflow state machine for welding system: hardware integration, data archival, GUI (C#)
- Designed software architecture to control test equipment for a fully automated production line and product testing with <10s takt time, integrating SCARA arms / vision systems / conveyors (Denso / Wincaps III)
- Wrote FDA protocols for numerous Fixtures and Tools

Intuitive Surgical: Software Automation Manager **(Aug 2015 - June 2017)**

- Managed software development team, supporting all automated production equipment for instrument and accessory lines (> 1 million instruments / year)
- Balanced competing priorities, urgent deadlines, and customer needs, which allowed team members to focus on development
- Drove re-architecture of codebase into a common framework, unifying isolated projects into extensible and re-usable code with high enough test coverage to start using continuous integration principles

Software Automation / Mfg Engineer (Intuitive Surgical) **(Nov 2013 - Aug 2015)**

- Led software development for Instrument Performance Testers, reducing takt time by 80%. This success led to factory-wide adoption (Python and Matlab)
- Developed test and automation software for medical stapler 60 production line, including: labeling, programming, leak-testing, and instrument motion testing (python, matlab)
- Implemented & patented torque measurement & cable tensioning control algorithms (Matlab). This improved precision and accuracy, leading to Cpk increases of up to 3x across 24 instrument lines

Luidia (eBeam Interactive Whiteboards): Design Engineer **(2011-2013)**

- Wrote Kalman filter, reducing stylus latency by 50% and increasing effective precision by a factor of 2.5x
- Developed shape recognition algorithm to convert array of input points into ideal shapes: star, ellipse, polygon, etc.
- Optimized stylus firmware responsiveness with sleep timer improvements (PIC assembly)
- Developed eBeam Glove, a sensor-enabled glove that allows users to control cursor movement and input gesture-based commands
- Designed rechargeable stylus assembly, including mechanical design, circuit design, DFM, and vendor selection/management

NASA Ames & SETI: Student Researcher **(2007-2009)**

- Developed software tools to perform automated detection / mapping of key minerals on the surface of Mars (IDL and ENVI)
- Created simulation of Martian surface, modeling mineral mixing, natural light contributions, atmospheric effects, and sensor imperfections (warping, noise, frequency sensitivity curves), prior to processing the CRISM data pipeline.
- Developed noise-filtering algorithm for Compact Reconnaissance Imaging Spectrometer for Mars (CRISM), allowing continued use years after failure of a critical cooler

Relevant Academic / Internship Experiences **(2004-2011)**

- California Solar Advisory Board - Student Researcher: Assess and present technologies to lawmakers
- UC Davis / Relativistic Heavy Ion Collider - Research Assistant: Isolated individual particle pathways in heavy-ion collisions, increasing knowledge of physics immediately following The Big Bang (C++)
- Stanford M.S. Mechanical Engineering: Smart Product Design (ME218), User Centric Design (ME310)
- University of California, Davis: B.S. Applied Physics