Samuel N. Lucas

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Tufts University (Medford, MA) 2018 – Spring 2020

Graduation: Master of Science degree in Mechanical Engineering with focuses in design, dynamics, and control

Notable Course Experiences:
- Statistical quality control
- Technical leadership
- Digital control of dynamic systems
- Machine learning and data mining
- Advanced dynamics
- Customer-driven R&D
- Sustainable engineering
- Business communications

The Pennsylvania State University (University Park, PA) 2013 – Fall 2017

Graduation: Bachelor of Science degree in Physics

Extracurricular: Society of Physics Students 2015 – 2017, Penn State Crew Team 2014 – 2015

Notable Course Experiences:
- Programming in C++, MATLAB
- Engineering design
- Computational physics
- Quantum physics & wave motion
- Effective technical writing
- Medically-applied nuclear physics
- Fluid & thermal physics
- Theoretical mechanics

Bridge12 Technologies, Inc. (Framingham, MA) May 2017 – Present

Scientist (August 2017 – Present)
- Chiefly responsible for the control systems of assorted radiation technologies in the microwave/terahertz products division
- Designing systems from the ground up: custom circuitry, embedded controllers, writing firmware, APIs, GUIs
- Writing algorithms and developing original software revolving around nuclear physics and wave motion
- Often responsible for market research and cost-performance analysis of system-related hardware and software
- Projects include particle accelerators, gyrotrons, vacuum bakeout systems, and lab instrumentation

Research and Development Intern (May – August 2017)
- Designed control system for a specialized lab instrument, including firmware and a remote-control desktop application
- Aided in hardware design and part selection, as well as debugging hardware issues during development

Penn State - Department of Physics (University Park, PA) January – May 2016

Teaching Assistant
- Instructed sophomore-level physics curriculum and led weekly labs on electricity and magnetism
- Graded assignments, proctored exams, and assisted students in their learning through office hours

Gannett Company, Inc. (McLean, VA) May – August 2015

Data Entry Associate
- Assisted with data consolidation and organization during divisional corporate entity split
- Worked with a small team to overhaul the legal records database

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Certified Lean Six Sigma Black Belt
- Earned in 2019 following the implementation of a new inventory management system at Bridge12 Technologies, Inc.
- Guided process owners in metrics, product selection, and project management to minimize sunken costs

Development Tools & Languages
- Highly experienced with C/C++, Python, HTML, CSS, Bash
- Proficient in MATLAB, JavaScript, Java, WebAssembly
- Git, Vivado, SolidWorks, KiCAD, Qt Creator, Adobe Design Suite

Field Experience
- Strong familiarity with Linux and building kernels
- Comfortable building and designing custom PCBs
- Device firmware, system APIs, mobile apps