

James Davis

SillyInventor@Gmail.com

Skills

Programming: C, C# (.net), Java, Javascript, Python, Django, Postgres, MySQL, Dev Ops (Git, SVN, etc.)
Engineering: CAD (Solidworks, Inventor, NX), Circuit & PCB Design, Sensor Design, Mechanical design

Selected Work Experience

Senior Design Engineer	Crystal IS Inc	Sep 2018 – Present
Made and tested PCBs in Eagle for measurement and feedback circuits for UVC LEDs and nitrate sensor controllers (display, communication, storage). Using Solidworks, a band saw, and a drill press to make test setups for lifetime testing for photodetectors and collimated SMD LEDs, and thermal testing of different heat sink designs. Wrote arduino code for display, communication, storage, data processing.		
Lead Staff Programmer	Rensselaer Polytechnic Institute	Dec 2016 – Sep 2018
Built websites in python (Django) and javascript for k-12 visual programming instruction. Wrote programs in javascript and C for robotics in k-12 STEM education. Ran a team of 22 undergraduates and 1 staff member. Ran numerous educational experiments to improve website and program.		
NSF Fellow	Rensselaer Polytechnic Institute	Aug 2014 – Dec 2016
Designed and deployed a novel, ad-hoc, solar-powered distributed sensor network for water quality monitoring. Developed and tested a new solid-state, absorption based, phosphate sensor. Designed and proposed a novel QCFK enhanced single-device spectrograph.		
Engineer	1366 Technologies	Jun 2012 – Aug 2014
Designed and programmed a new automata in C# to analyze the size, shape, and metrology of solar silicon wafer production, and perform quality control. Designed and tested new laser based metrology characterization tools. Designed automated furnace load locks.		
Co-Founder	DripDrop	Jun 2011 – May 2012
Designed and tested a system for automated analysis of bacteria counts flowing through a pipe. Designed an ultra-low-cost absorption spectrograph for fast, partial water quality analysis. Wrote a business plan and won a number of technical competitions.		
Inventor	Rensselaer Polytechnic Institute	Jun 2011 – Aug 2011
Designed an LED based solar simulator to reduce cost and improve performance. Performed thermal and optical simulations analysis. Built, measured, and presented the simulator.		

Education

MS of Multidisciplinary Science	Rensselaer Polytechnic Institute	Aug 2014 – Dec 2016
BS of Mechanical Engineering	Rensselaer Polytechnic Institute	Aug 2009 – Jun 2012

Awards

NSF Fellowship, Walmart Better Living National Design Competition, Class of '51 Design Competition, 3x Change the World Design Competition