Benjamin N. Wiener

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Skills

Computing	Modeling and Simulation, Optimization, Mathematical Analysis
Languages	Python, Mathematica, Javascript, C/C++
Programs	GNU/Linux, COMSOL, OpenCV, Solidworks/OnShape, Adobe Illustrator, LaTeX
Laboratory	Microfabrication, Electron Microscopy, Digital Electronics, Microcontroller Programming

Education

2012 – 2019 **Brown University**, *PhD in Physics*.
Performed the first measurement of ionic motion in a liquid viscosity gradient.
Helped develop a new electrospray mass spectrometer with the goal of analyzing and sequencing proteins and other biopolymers.
Thesis: *Electrokinetic current driven by a viscosity gradient*
Adviser: Prof. Derek Stein

2007 – 2011 **Brandeis University**, *BS in Physics*.
Experimental particle physics: Worked on development of the alignment system for the ATLAS end cap muon detectors.
Thesis: *Determing the ATLAS muon momentum resolution from Z and high mass Drell-Yan events.*
Adviser: Prof. Craig Blocker

Experience

2015 – **Co-Founder**, *Sheepdog, LLC*.
Built a web application for tracking attendance at pre-schools and after-school programs. This app is still used every day.

2011 – 2012 **Research Technician**, *CERN/Brandeis University*, Geneva, Switzerland.
Helped install, test, and debug ATLAS muon spectrometer alignment devices. Wrote software for and helped build and test the ATLAS Long Guide Tube, designed to replace the ATLAS beam pipe. Wrote code for particle track based measurement of ATLAS muon spectrometer alignment.

Interests/Projects

Programming	*Many projects including web apps, video games, and interactive demos*
Robotics	*Self-balancing inverted pendulum, portrait drawing robot, axe wielding battlebot*
Machine Learning/AI	*Online courses and experiments with Keras/Tensorflow and PyTorch*
Electronics	*Projects and experiments with microcontrollers and radio (KC1EVW)*
Woodworking	*Furniture, boats, trebuchet*
Backpacking	*Pemi Loop, AT section hikes, Presidential Range*