

JOSEPH W. CRANDALL

1831 North Hartford Street, Arlington, Virginia 22201

Mobile: 703-232-5835 | Email: jwcrandall@gwmail.gwu.edu | Website: josephcrandall.com

LinkedIn: www.linkedin.com/in/joseph-crandall-67003570 | GitHub ID: [josephcrandall44](https://github.com/josephcrandall44)

ORCID: 0000-0002-9684-9214

EDUCATION

The George Washington University, Washington, DC

Bachelors of Science, Computer Science

May 2017

Bachelors of Science, Physics

May 2017

Washington–Lee High School, Arlington, Virginia

International Baccalaureate Full Diploma

May 2012

TECHNICAL SKILLS

Academic Subject Matter Focus

- Classical Mechanics, Laboratory Physics, Relativistic Mechanics
- Algorithms, Artificial Intelligence, Operating Systems, and Systems Programming
- Calculus, Linear Algebra, and Differential Equations

Imaging/Clean Room

- Proficient with Scanning Electron Microscope (SEM), Atomic Force Microscope (AFM), Electron Beam Lithography (EBL), and Soft Lithography
- Novice with Transmission Electron Microscope (TEM)

Robots Used

- Novice with Schuck LWA 4P and Yale OpenHand Project Model T

Programming/Markup Languages & Operating Systems

- Proficient with Arduino, C, C++, Java, Linux, Ros, and LaTeX
- Proficient with CSS, HTML, JavaScript, JQuery, MySQL, and PHP
- Novice with Mathematica, and Python

PROFESSIONAL WORK EXPERIENCES

Additive Manufacturing Research Assistant, Knoxville TN

July 2016 – August 2016

Higher Education Research Experience (HERE) at Oak Ridge National Laboratory

Contacts: Dr. List – lstfaii@ornl.gov, Dr. LeBlanc – sleblanc@gwu.edu

- Milled stainless steel Bi_2Te_3 powder distribution system, accurate up to 100 micrometer powder layers, in order to validate the powder spreading component of an in development additive manufacturing selective laser melting system in order to manufacture more efficient Bi_2Te_3 based thermal electric converters

Result: Developed powder bed system for selective laser melting

Payment: \$2,600 (USD)

Nano-Technology Fellowship, Washington DC

May 2016 – July 2016

The George Washington University, paid through National Science Foundation

Contacts: Dr. LeBlanc – sleblanc@gwu.edu, Dr. Sorger – sorger@gwu.edu

- Etched microfluidic channels through soft lithography process
- Manufactured nanoscale electronic lattice through electron beam lithography and liftoff process on silicon wafers.
- Imaged electronic lattice with SEM and AFM

Result: Acquired a proficiency in clean room and imaging machinery

Payment: \$2,600 (USD)

Robotics & Computer Vision Research Assistant, Washington DC

September 2015 - Present

The George Washington University

Contacts: Dr. Simha – simha@gwu.edu, Dr. Choi - hchoi@gwu.edu

- Developing robotic arm and hand system to pair with automated turn table to manipulate plant growth over time to better image plant development point cloud sensory data.
- Funded through NSF to attend Internet of Things (IOT) security conference in, Seoul, South Korea January 2016

Result: Added robotic biological manipulation capability through Robotic Operating System (ROS)

Payment: \$ 7,000 (USD)

Nuclear Physics Research Assistant, Ashburn VA

May 2014 - July 2014

The George Washington University

Contacts: Dr. Strakovsky - igor@gwu.edu

- Plotted data using PHYSICA software for testing of final-state-interaction code for extraction of neutron pion photoproduction cross sections from the deuteron data

Result: Introduced to Nuclear and Particle Physics theories

Payment: \$ 600 (USD)

CONFERENCES/PRESENTATION

2017 GW SEAS R&D Showcase

February 22 2017

Washington, D.C.

- Presented poster titled “Particle Morphology Characterization of Bismuth Telluride (Bi_2Te_3) Powder for Additive Manufacturing”

2016 Quadrennial Physics Congress

November 3 – 5 2016

San Francisco, California

- Presented poster titled “Particle Morphology Characterization of Bismuth Telluride (Bi_2Te_3) Powder for Additive Manufacturing”
- Toured Stanford Linear Accelerator Center

KISA-George Washington Univ. Joint Seminar on IoT Security

January 7 – 9 2016

Seoul, Korea

- Assisted in presentation on Authentication on Internet of Things (IoT) covering low complexity scalable authentication framework suitable for low power IoT environments and applications.
- Toured Korean Internet & Security Agency

LEADERSHIP

Founder/Developer of Assistance.net, Arlington, Virginia

February 2013 -December 2014

18-month Start Up

- Built a LAMP stack site using laravel framework (source code on GitHub)
- Developed business model for individual service provider market place website
- Organized team of developers; leased office space; incorporated in Delaware; negotiated contracts; set up physical server in Ashburn, Virginia; utilized AWS; produced promotional videos

Result: Weathered the challenges and life cycle of an internet startup

ACTIVITIES

- Activities Chair, Society of Physics Students, Student Chapter September 2014 - Present
- Rower and Member, Potomac Boat Club July 2015 - Present
- Member, Association for Computing Machines, Student Chapter, September 2014 - Present
- Brother, Delta Tau Delta Fraternity January 2013 – Present