

# Drew Dudash

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## Résumé

Software developer with applied research experience. Solves open problems without guidance. Interested in robotics, quantum computing, and decentralized networks. Practices modern software development practices: unit testing, integration testing, documenting, version control. Seeking research work.

### Education

2014–2018 **Bachelors**, *Virginia Tech*, Blacksburg.  
Computer Engineering

### Experience

2018–Present **Software Developer**, *Noblis*, Reston.

Lead, proposed, and developed software for internal research projects.

- Software developer for small prototype cooperating robots.
- Presented at Autonomous Technology Summit
- Proposed a year long internal research project, received funding, and lead project.
- Sole technical author on white paper sent to in response to DARPA blockchain Request for Information.
- Technical writer on a proposal for Federal Highway Administration's Exploratory Advanced Research project.
- Lead developer on multiple decentralized Python applications including distributed sensor fusion.
- Sole author on Air Force grant letter of inquiry.
- Hired and supervised several interns.

Summer 2019 **Part-Time Lecturer**, *Northern Virginia Community College*.

Fall 2019 Taught three online IT classes part time.

- Provided live lectures.
- Wrote assignments and exams.

Summer 2018 **Cybersecurity Intern**, *Virginia Cyber Range*, Blacksburg.

Backend software development.

- Refactored and documented legacy Python code for measuring system usage.
- Optimized Python measurement code to be over 200 times faster than the original.

Spring 2017 **Undergraduate Research**, *Dr. Na Meng*, Blacksburg.

Attempted to simulate user testing of phone by recording real users and generating inputs based on records.

- Modeled user input events as a markov process.
- Create weighted directional graph showing likelihood of event chains.

Summer 2017 **Cybersecurity Intern**, *Noblis*, Reston.

Penetration Testing

- Worked in a team of four to create a novel software exploit.
- Demonstrated exploit in a presentation to management and several dozen people.

2015-2017 **Software Developer at Virginia Tech Recreational Sports**, *Virginia Tech*, Blacksburg.

- Sole developer on a distributed computer vision data collection system in Python.
- Trained machine learning algorithm to greater than 80% accuracy without any formal background in machine learning.

Summer 2014 **Digital Media Intern**, *TBC Corporation*.

Summer 2013 **Software Development Intern**, *Carney Labs*.

- Wrote web application for analyzing human language with Python's Natural Language Toolkit.
- Demonstrated project to management and over a dozen people.

## Activities

- Provided guest lecture on computer hardware for instructor at Northern Virginia Community College.
- Licensed amateur radio operator. Call Sign: KO4QWJ
- Part of team that won the 2017 Virginia Cyber Cup.
- Previously Officer in Virginia Tech Cyber Security Club
  - Taught weekly beginner meetings for a semester on topics such as password storage and timing attacks. Audience consisted of anywhere from ten to thirty people.
  - Designed challenges for annual Cyber Security Summit competition multiple years.

## Technical Knowledge

- Worked professionally using Python, C, C#, C++, and Java.
- Extensive experience with backend web development. Wrote distributed applications in Python as lead developer multiple times.
- Extensive experience with low level software. Designed and implemented digital hardware on FPGAs and ran machine code on custom hardware. Wrote robust parsing and path finding libraries for a microcontroller without any dynamic memory allocation.
- Ported existing robot control system to Robot Operating System.
- Familiar with Linux, Git, Regular Expressions, HTTP, JSON, SQL, MongoDB,  $\LaTeX$ , and Robot Operating System.

## Sample Projects

These are links to some of my previous software projects.

- Minesweeper
- Path Finding Algorithm for Microcontroller
- HTTP Response Parser for Microcontroller
- Neural Network Library
- Web Vulnerability Examples