NICHOLAS S. BRADFORD

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EDUCATION

WORCESTER POLYTECHNIC INSTITUTE (WPI)
B.S. in Computer Science, Minor in Robotics | GPA: 3.67/4.0 May 2017
Honors: Omicron Delta Kappa (Leadership Honor Society), Legacy Leader, Dean's List (recurring)

Coursework: Machine Learning ▪ Deep Neural Networks* ▪ Object-Oriented Design ▪ Compilers ▪ Software Security ▪ Computer Vision* ▪ Theory of Computation ▪ Statistical Learning*

EXPERIENCE

MICROSOFT | SOFTWARE CONTRACTOR | Cambridge, MA Oct-Dec 2016
- Working on the Garage program to modernize the **data analytics** and warehousing solution at the Museum of Science in Boston, including implementation of a real-time operations dashboard (Azure, Power BI) and automatic **anomaly detection** system.

QUANTLAB FINANCIAL | RESEARCH INTERN | Boston, MA May-Aug 2016
- Investigated and implemented **compiler** feature additions (C++) for a proprietary language.
- Optimized, tested, and benchmarked a data processing routine for a **globally deployed** quantitative trading system, resulting in a computational performance gain of **over 30%** (C++).
- Designed an interactive **JavaScript** tool for visualizing complex tree data structures (D3.js).

SILICON LABS | SOFTWARE ENGINEER INTERN | Boston, MA May-Aug 2015
- Created a multithreaded **Python** GUI tool to run radio transmission hardware tests, allowing downstream users to work efficiently and view processed data in **real-time** (PyQt, matplotlib).
- Wrote a comprehensive suite of fuzz **security tests** for the Thread **IoT** mesh networking protocol stack, discovering and fixing several key vulnerabilities (Java, C).

JACOBS TECHNOLOGY | SOFTWARE INTERN | Nashua, NH May 2014-Jan 2015
- Extended mission planning software for the Boeing KC-46 midair refueling tanker, resulting in conversion of raw data into a useful **HTML** summary format for pilots (C++, C

PROJECTS

QUANTITATIVE TRADING RESEARCH | WPI, Personal Sept 2015-Aug 2016
- Built and deployed an **SVM**-based automated trading system with Quantopian/Robinhood.
- Investigated using **LSTM recurrent neural networks** combined with agglomerative clustering to predict intraday stock price movement (scikit-learn, Lasagne, Zipline).

PARK TRAFFIC ANALYSIS | CERES | Melbourne, Australia Oct-Dec 2015
- Developed a combined observation/analysis technique for the CERES Environment Park to identify high-traffic areas (scikit-learn, OpenCV), leading to several exhibit improvements.

SKILLS

PROFICIENT | C ▪ C++ ▪ Java ▪ Python **FAMILIAR** | JavaScript ▪ HTML ▪ CSS ▪ Scala
TECHNOLOGIES | scikit-learn ▪ OpenCV ▪ SQL ▪ MongoDB ▪ Bootstrap ▪ D3.js

LEADERSHIP

PRESIDENT | WPI Investing Association Feb 2016-Present
- Leading over 20 students in financial education, simulated management, and competition.
- Founded a spin-off group for student collaboration on automated trading systems.

INTERNAL GOVERNANCE CHAIR (VP) | Phi Kappa Theta Fraternity Jan 2016-Present
- Serving as manager of the Cabinet, advisor for events, and enforcer of the chapter bylaws.

**Coursework to be completed by May 2017.*