Alexander Madey

Software developer with data science talents. Has a strong programming background in industry and academia. Successfully applied machine learning to multiple real-world business problems. Contributed creative programming and machine learning solutions to a variety of academic research projects.

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EXPERIENCE

The Lebermuth Company, South Bend IN — *Software Developer*

January 2020 – Present

- Used random forests to predict loss of priority customers with 86% accuracy
- Used timeseries models to forecast sales, reduced monthly forecast error 25%
- Built an internal application with MS PowerApps to predict stockout dates, stockout risk, and expected holding cost for purchased materials
- Built analytics dashboards with Power BI from an SQL Server Data Warehouse

MathWorks, Natick MA — *Software Engineer Intern*

January - August 2016

- Designed integration tests, test tools and mock components in Java for UI in desktop and web versions of MatLab software.
- Learned about software engineering practices in a corporate environment: testing, clean code, agile development, OOP patterns, etc.

University of Notre Dame, South Bend IN — *Research Programmer*

Summers 2013 – 2019

- Built simulations of yeast evolution and microtubule growth for a biochemistry lab. Experience in Java, MatLab and interdisciplinary collaboration
- Designed collision avoidance systems for drones and tested in physical drones. Used CNNs in Python to classify images of humans in water from drone-mounted IR cameras

PUBLICATIONS

Simulating Drone Swarms — *2013 Research & Publications*

Designed and simulated decentralized command and control schemes for military drone swarms. Spoke at an agent-based modeling conference and work published to journals.

- Madey, Alexander G. "Unmanned Aerial Vehicle Swarms: The Design and Evaluation of Command and Control Strategies using Agent-Based Modeling." *International Journal of Agent Technologies and Systems (IJATS)* 5.3 (2013): 1-13.
- McCune, Ryan, ..., Madey, A., et al. "Investigations of DDDAS for command and control of UAV swarms with agent-based modeling." *Proceedings of the 2013 Winter Simulation Conference: Simulation: Making Decisions in a Complex World*. IEEE Press, 2013

SKILLS & LANGUAGES

- Agile Software Development
- Java - JUnit, Selenium, JDBC
- Python - NumPy, Pandas, Keras, SciKit-Learn, SQLAlchemy
- Stats/ML - CNNs, ARIMA, Random Forests, Linear Regression
- Front End Web Dev - HTML, CSS, JavaScript, React
- Database - MySQL, SQL Server
- Mobile - Swift, Cordova, PowerApps
- VCS - Git, GitHub, BitBucket
- IDE - Eclipse, IntelliJ, PyCharm, Xcode

EDUCATION

BS in Computer Science
Colorado State University, Fort Collins

Graduated December 2019

GPA: 3.66, Dean's List 2018-2019

Selected Coursework:

- Machine Learning
- Software Engineering
- Algorithms
- Artificial Intelligence
- Data Structures
- Databases
- Networks and The Internet
- Systems Security
- Operating Systems
- Statistics for Scientists & Engineers
- Linear Algebra
- Calculus
- Neuroscience