MARK KAMUDA

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SUMMARY

Data scientist with 5 years of diverse experience leveraging classical methods and deep learning algorithms to solve real-world problems.

EXPERIENCE

Fidelity Investments - Senior Data Scientist **2021 - Current**

- Implemented statistical methods and open source deep learning solutions to generate interpretable models and novel features for fraud detection
- Created a call center queue by quantifying the risk of call center interactions
- Correctly classified above 60% of fraudulent call center interactions with minimum customer friction
- Identified above 70% of fraudulent activity in new accounts
- Created new features using unsupervised anomaly detection in time-series data
- Developed repeatable methods through documentation and software development best practices

Applied Research Associates - Computer Vision Engineer **2019 - 2021**

- Led development of machine learning and classical computer vision algorithms to solve problems using unstructured remote sensing data
- Researched and modified open source solutions to quickly identify and prototype promising models
- Secured funding for a project by creating a proof of concept that implemented classical computer vision techniques and unsupervised clustering
- Added novel features to our feature extraction toolbox in order to improve downstream tasks and enable additional capabilities
- Mentored two interns in exploring novel feature extraction methods

University of Illinois - PhD Candidate **2017 - 2019**

- Developed annsa, an open source Python package for gamma-ray spectroscopy dataset construction and deep learning with spectroscopic data
- Explored and evaluated dense, convolution, and autoencoder neural networks for classification and regression problems in nuclear security
- Applied software development best practices including version control with Git, unit testing, CI/CD, and automated documentation
- Ran training experiments, evaluation scripts, and hyperparameter searches using EC2 instances hosted by Amazon Web Services

LEADERSHIP

The Hacker Within-Illinois, President **2018 - 2019**

- Managed a software skill-sharing club of over 25 members
- Sustained membership by encouraging participation and planning creative topics and activities
- Wrote and delivered multiple technical presentations and tutorials

Engineering Outreach Society, President **2013 - 2014**

- Headed an outreach organization of over 50 students with an executive board of five people
- Coordinated weekly science projects with a team of ten elementary school teachers

EDUCATION

University of Illinois at Urbana-Champaign, Illinois

Doctorate, Nuclear Engineering **2017 - 2019**
Masters, Nuclear Engineering **2014 - 2017**
Bachelors, Nuclear Engineering **2010 - 2014**

SKILLS

Software: PyTorch, sklearn, scikit image, OpenCV, Numpy, Pandas, SQL, TensorFlow, Keras, GDAL, QGIS
Machine Learning: DNNs, CNNs, autoencoders, keypoint extraction, classical computer vision, twin networks, metric learning