

Justin Cargiulo

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United States Citizen | U.S. Secret Security Clearance

Education

University of Pennsylvania

- Master's of Science in Engineering - Data Science

Fall 2025 Graduation

University of Maryland

- Bachelor of Science - Honors Electrical Engineering
- Minor - Technology Entrepreneurship and Innovation
- GPA: 3.5

Work Experience

Deloitte, *Solutions Consultant*

August 2024-Current

- Designed and implemented scalable, secure AWS cloud infrastructure solutions, ensuring high availability and cost-efficiency for client environments.
- Developed and deployed machine learning models and AI/ML solutions, leveraging AWS services and Python to enhance predictive analytics, automation, and business intelligence for clients.
- Effectively communicated technical solutions and project progress to both technical and non-technical stakeholders, delivering presentations and fostering strong client relationships to ensure project success.

Technical Experience

Data Science and Data Visualization Expertise

- Excelled in advanced data analysis and visualization techniques, utilizing Python (including libraries such as Pandas, NumPy, and Matplotlib) and SQL for data manipulation and querying.
- Skilled in creating insightful, interactive visualizations using tools like Tableau and Python's Seaborn, effectively communicating complex data insights to both technical and non-technical audiences.
- Demonstrated ability to derive meaningful patterns and trends from large datasets, enhancing decision-making processes and providing strategic business insights.

Neural Network and Deep Learning

- Designed and implemented neural networks and convolutional neural networks (CNNs) using Python, TensorFlow, and Keras for image classification tasks.

SQL and NoSQL Database Management

- Proficient in both SQL and NoSQL database technologies.
- Demonstrated expertise in designing, querying, and managing relational databases using SQL, and developing scalable solutions with NoSQL databases such as MongoDB.

Skills

Programming Languages

C/C++ | MATLAB | Linux | SystemVerilog | Assembly Language | R | Python (TensorFlow, PyTorch, Pandas, Seaborn) | SQL |

Technical Skills

| Excel | Autodesk | Digital Logic Design | Vivado | Signal and System Processing | Semiconductor Verification | FPGA Design | Embedded Software Design | Machine Learning | Data Science | Computer Architecture | Software Collaboration | Azure | Hadoop | AWS | Spark |

Soft Skills

Communication | Public Speaking | Effective Teamwork | Engineering Design | Critical Thinking |

Research Experience

In my research, "Fusing Spatial and Frequency Data for Robust Detection of DALL-E 3 Generated Images," I developed a hybrid model combining spatial image data with frequency domain data using Fast Fourier Transforms (FFT) to enhance AI-generated image detection. The study aimed to identify digital signatures in images created by OpenAI's DALL-E 3 model. By training a Convolutional Neural Network (CNN) on both image data and its frequency spectra, the hybrid model improved classification accuracy by 12% compared to image-only models. These findings suggest that frequency data provides valuable insight into distinguishing AI-generated content from human-created images, paving the way for more robust detection methods.

Certifications

IBM Professional Certificates:

- Databases and SQL for Data Science with Python
- Machine Learning with Python
- Data Visualization with Python
- Data Analysis with Python
- Python for Data Science, AI & Development

Awards

University of Maryland Department of Electrical and Computer Engineering Service Award
Presented to a graduating senior from each major who has demonstrated exceptional leadership and service to both their fellow students and the department.