# Jason Cusati

djjay@vt.edu 202.596.2477 @djjay0131 jason-cusati
djjay0131 djjay0131.github.io/website Google Scholar



## Professional Summary

- Results-oriented technical executive and principal engineer with deep experience leading platform architecture, data integration, and SaaS operations. Specialized in Azure (Data Factory, Storage, Key Vault), large-scale ETL/ELT pipelines, automation, and end-to-end delivery. Proven record building teams, accelerating migrations, and embedding AI/ML to increase quality and speed of software delivery.

## Professional Experience

April 2026 – May 2026
- **Virginia Tech — Blacksburg, VA** *Graduate Research Assistant – ARCADE Lab (PI: Dr. Afsari)*
  - Designed and built cloud infrastructure for the **Multi Robot System (MRS)** for Remote Construction Progress Monitoring, including network architecture, mesh VPN, REST API, and Web UI.
  - Built Terraform-based Infrastructure-as-Code and CI/CD pipelines for repeatable environment provisioning and deployment.
  - Hardened the platform with 2FA on the Web UI, secured video streaming, and instrumented audit logging across services.
  - Stabilized robot connection leases and improved Web UI performance under sustained streaming load.

2024–2025
- **Yoh, A Day & Zimmerman Company — Remote, SC** *ADF Solution Architect – Core Specialty Insurance*
  - Led a small SDE team delivering V1 of an **Insurance Data Ingestion Platform** for a specialty carrier: extended Microsoft's Common Data Model into a domain schema for the carrier's data types; reduced time-to-ingest by **50%**.
  - Architected and implemented an API to orchestrate Azure Data Factory pipelines and data flows.
  - Used **Claude as engineering partner** to scaffold pipeline code and generate ADF source-to-target mappings; hand-implemented the more complex transformation and validation logic.
  - Built a Streamlit UI integrated with the Data Ingestion API for faster analyst feedback loops.

## Professional Experience (continued)

2021–2023 • **Duck Creek Technologies — Columbia, SC** *Senior Technical Architect – OnDemand SaaS Operations*

- Led first client launch on accelerated 3-month timeline with automated deployments to Azure Storage, Key Vault, Redis, and Docker.
- Led customer through launch of 1st client on accelerated timeline of 3 months with fully automated deployment to Azure Storage Services, Key Vault, Redis cache, and Docker containers using a combination of ADO and Octopus Server, via Bash and PowerShell scripts, working within the SaFe framework.
- Participated in launch of 1st client on accelerated timeline of 3 months with fully automated deployment.
- Designed end-to-end data integration/transformation across hybrid SaaS systems.
- Architected robust and adaptive end-to-end data integration and data transformation solutions, utilizing hybrid hosted single-node and shared SaaS applications with integrations across multiple third-party applications and service providers.
- Drove ADF implementation connecting Duck Creek data with customer Data Lakes.
- Built deployment analysis framework (C#, PowerShell, Octopus, ADO) eliminating **75%** of deployment issues.
- Developed Python algorithm to predict Sev 1 incidents from logs.
- Analyzed server logs and predicted Sev 1 cases through creation of AI algorithm written in Python, using scikit-learn.
- Coordinated in PEN testing and consulted on risk mitigation options for pre go-live security assessment.
- Developed Azure Authentication flow for SSO integration into on-premise, cloud-hosted, and third-party applications.
- Saved hundreds of hours by developing automated upgrade scripts for a 3-year-old Octopus instance.
- Saved hundreds of hours of manual clicking by developing automated upgrade scripts written in PowerShell for a 3-year-old Octopus instance and overseeing multiple exception cases.

2016–2020 • **Blackbaud — Charleston, SC** *Principal Engineer – Sustained Engineering*

- Delivered root-cause production fixes across enterprise products using C#, SQL, and performance tooling; achieved **100%** resolution on critical cases.
- Cut deployment time and customer involvement by **50%** via DevOps scripting and YAML pipelines.
- Reduced deployment time and customer involvement by **50%** by engineering DevOps scripts for custom code deployment to Azure multi-tenant environments, standardizing Azure pipelines using continuous deployment YAML scripts and NuGet artifact management, and single package deployments.
- Met **100% SLA** for Tier 3 support, improving VB.NET, C#, and Java systems.
- Designed SAML 2.0 SSO component; published REST APIs to Azure using Swagger-based codegen.
- Boosted security and user administration by designing and implementing SSO component for enterprise CRM product by utilizing SAML 2.0 protocol. Unilaterally designed all SAML plug-ins.
- Enabled automation generation and publication of APIs to Azure by constructing REST Web Services for enterprise product API and framework using Swagger Code Generation CLIs.
- Finalized DevOps continuous deployment process for customer application software development by automating delivery of component software library and customer-specific integration code into single deployment package.
- Enhanced staff development and performance by training and leading junior staff members.
- Collaborated with Microsoft consultants to build fully customizable bulk import tool using Angular, Node.JS, and HTML 5.0.

## Professional Experience (continued)

2011–2016 • **Blackbaud — Charleston, SC** *Solution Architect – Enterprise Professional Services*

- Led multiple enterprise implementations from architecture to go-live; coordinated global teams.
- Designed full CRM integrations and migration strategies, reducing timelines by **50%**.
- Built Azure environments for development and CI/CD.
- Devised cohesive view of implementation projects across business unit with consistent issue tracking system through execution of Atlassian suite of tools to decrease project overruns.
- Steered enterprise data migration projects for client with 10M+ constituents and 1B+ records across US and European Union, ensuring compliance with national data laws.
- Conducted deep-dive on existing data conversion processes and executed improvement plan by generating automated Validation Scripts in SQL Server and automating the iterative conversion process.

2005–2011 • **DJJayNet Consulting — Arlington, VA** *Software Engineering Consultant*

- Integrated user interfaces with Crestron touch hardware using custom .NET controls.
- Implemented REST APIs with Entity Framework and C#.
- Created back-end REST API for multi-dwelling concierge system in Trump Towers South Beach via utilization of C# .NET.

## Education

2027 (exp.) • **Ph.D., Computer Science (SE with AI/ML/MI)**, Virginia Tech, Blacksburg, VA
2026 (exp.) • **M.S., Engineering**, Virginia Tech, Blacksburg, VA
• **B.S., Economics**, Virginia Tech, Blacksburg, VA

## Research Publications

### Journal Articles

1. **J. Cusati** and C.-S. Chuang, "Virginia tech transportation safety index (vttsi)," *arXiv preprint arXiv:2606.21154*, 2026. URL: https://arxiv.org/abs/2606.21154
2. C. Brown and **J. Cusati**, "Exploring the evidence-based se beliefs of generative ai tools," *arXiv preprint arXiv:2407.13900*, 2025. URL: https://arxiv.org/abs/2407.13900

### Conference Proceedings

1. **J. Cusati** and C. Brown, "From papers to progress: Rethinking knowledge accumulation in software engineering," in *Proceedings of the IEEE/ACM 48th International Conference on Software Engineering (ICSE 2026)*, Accepted; to appear, 2026. DOI: 10.1145/3793657.3793888

## Selected Projects & Research

- **LLM Coding Assistant** — Python, Streamlit, OpenAI API; FastAPI backend; agentmon design.
- **Security Vulnerability Classifier** — Repository scanner classifying code against CVE mappings.
- **Sentiment Analysis of Yelp Reviews** — Python, Pandas, NLTK; topic modeling with LDA.
- **Predicting NFL Player Performance** — Time-series modeling using ML regressors.

## Technical Skills

### Platforms

- Windows; Linux; IIS; Apache; Tomcat

### Tools

- SQL Server; MySQL; Oracle; Access; PostgreSQL; .NET; AngularJS; Entity Framework; jQuery; Atlassian; TeamCity; Azure; Azure API; AWS; ADO; Docker; Octopus; Android Studio; IntelliJ; Eclipse; R Studio; VS Code; PyCharm; Wireshark; Streamlit; FastAPI

## Technical Skills (continued)

### Languages

- C#; Java; Python; JavaScript; Kotlin; VB.NET; PowerShell; Bash; T-SQL; HTML 5.0; CSS; ASP.NET; C; C++; Groovy; Objective C; PHP; Scala; Node.js; Vue.js; Gradle

### AI/ML

- scikit-learn; TensorFlow; KNN; RNN; CNN; LSTM; LLM; SVM; Linear Regression; Random Forest; Naive Bayes; Feature Engineering

## Miscellaneous Experience

### Awards and Achievements

May 2026
- **Phi Kappa Phi**, inducted member — national honor society recognizing academic excellence across all disciplines.
- **Omicron Delta Kappa**, inducted member — national leadership honor society.

2008
- **Customer Service Award**, LimeLeap Professional Services.

### Certification

- Certified Jira & Confluence Administrator
- Certified Scrum Master
- Certified Secure Software Lifecycle Professional (CSSLP)

## References

Available on Request