# VINCENT DAVIDSON

davidson.805@osu.edu ~ LinkedIn

## SUMMARY OF QUALIFICATION

Vincent Davidson is a recent graduate of Clemson University with a Master's in Computer Science and currently serves as a Graduate Research Assistant (GRA) at The Ohio State University, where he is pursuing a Doctor of Philosophy in Computer Science and Engineering (CSE). Additionally, his work integrates a strong passion for data engineering and infrastructure with leadership in solving complex data challenges. Currently, he is focusing on making reference architectures both actionable and scalable by leveraging tools like Databricks and Apache Spark. A pivotal aspect of Vincent's work is laying the foundation for advanced AI and machine learning workflows to utilize analytics better and drive business value. Vincent is deeply interested in evolving toward integrating Knowledge Graphs, trustworthy AI, and advanced analytics into these workflows, with a focus on areas such as fairness, explainability, and robustness, particularly in high-stakes domains like predictive science. By exploring the intersection of data engineering and AI, I aim to bridge the gap between robust infrastructure and intelligent systems to support scalable, reliable solutions. In the long term, Vincent is committed to mentoring and growing the next generation of engineers, fostering a culture of continuous learning and innovation. Through this work, he aims to enhance his expertise in creating transformative, data-driven systems that empower human-AI collaboration. Vincent's research interests also extend to developing debiasing algorithms for interpretability in natural language processing, recommender systems, and computational social science. To enhance fairness and user engagement, he applies these principles to trustworthy AI, semantic parsing, and knowledge graph reasoning. In addition to his doctoral research, Vincent has held data science roles at UNC Health and Nationwide, working on AI-based applications like length-of-stay models and data auditing workflows. Vincent's diverse technical skills and leadership experience exemplify his commitment to advancing the role of AI in human-centered applications, making him an asset in both academic and professional research environments.

## EDUCATION

**Ph.D. Computer Science - The Ohio State University** August 2024 - Current
*Graduate Research Assistant*
*College of Engineering*
Advisor: Christopher Stewart

**M.S. Computer Science - Clemson University** August 2022 - August 2024
*School of Computing*

**B.S. Computer Science - Winston-Salem State University** August 2012 - May 2018
*Undergraduate Peer Mentor, Lab Tutor*

## RESEARCH INTERESTS

Generative Explainable AI, GANs, Interpretable Machine Learning, Trustworthy AI, Information Retrieval, Knowledge Graph Reasoning, Graph Representation Learning, Responsible AI, Causality AI, Semantic Parsing, Knowledge Base, Human-Computer Interaction, Human-Robot Interaction, Robotics, Human-Centered AI, Human-AI Teaming, Natural Language Processing and Understanding, Visual Question-Answering systems, Knowledge-Infused Machine Learning/ Reinforcement Deep Learning, AI/Data Science for Social Good, Semantic Social Computing, Conversational AI, Human-Computer Interaction, and Semantic Web.

## SKILLS AND INTERESTS

| | |
|---|---|
| **Programming Skills** | Python, Java, SQL, MATLAB, React-Native, R |
| **Big-Data Environment** | Databricks**,** Snowflake**,** MapReduce and PySpark |
| **Version Control Systems** | GitHub, GitLab, and BitBucket |
| **Data Visualization and Analysis** | PowerBI**,** Orange**,** RapidMiner, WEKA |
| **Server and Scripting** | Tomcat, AWK, Shell, Perl |
| **Semantic Tools** | RDF/XML |
| **Python Libraries** | Numpy, Scikit Learn, and more |
| **Deep Learning Libraries** | TensorFlow, DNN, CNN, SVM, Apache |

## RELEVANT COURSEWORK

*Artificial Intelligence*
*Advanced Operating Systems*
*Algorithms*
*Machine Learning Systems*
*Deep Reinforcement Learning and Search*
*Human-AI Teaming*
*Data Mining*
*Computer Processing of Natural Language*
*Software Architecture/Engineering*
*Design and Analysis of Algorithms*
*Information Retrieval*
*Human-Computer Interaction*

## INTERNSHIPS/WORK EXPERIENCE

**Nationwide - Columbus, OH**
***Specialist, Databricks Engineer*** *- Enterprise Data Office* February 2026 - Current

Leveraging Databricks ML and GenAI capabilities, including:

- MLflow for experiment tracking and model lifecycle management
- AutoML and distributed model training
- Model serving and monitoring
- Feature Store governance

Driving enterprise AI enablement through Databricks Mosaic AI and Agent Bricks, which support:

- Retrieval-Augmented Generation (RAG) architectures

Fine-tuning foundation models

- Secure enterprise LLM deployment
- AI agents capable of reasoning over governed enterprise data

- Scalable GenAI workflow orchestration within the Lakehouse

***Sr. Analyst, Databricks Engineer*** - *Enterprise Data Office* December 2024 - February 2026

- Increasing reliability, observability, performance, and usability of cloud platforms at Nationwide.
- Leveraging Databricks to optimize AI workflows while managing enterprise-level data using

best practices as an Account Administrator - This role is the highest possible level in the Databricks Privilege Hierarchy with access to perform the activities of Data Admins, Workspace Admins & Users, Manage Central/Account-level feature settings and identity management.

**Georgia Tech Research Institute (GTRI)** June 2024 - January 2025

*Graduate Research Assistant, Sensors and Electromagnetic Applications Laboratory (SEAL)*

- Conduct research in Human-AI Teaming concepts, including AI digital twins, focusing on integrating human-centered design and human systems engineering.
- Derive and document requirements for AI systems in areas such as ethics, safety, and situation awareness, ensuring alignment with user needs and societal values.
- Conduct software evaluations to assess AI-based systems' performance, usability, and reliability.
- Develop a method for evaluating the impact of AI systems during their development lifecycle to ensure accountability, safety, and user effectiveness.

**UNC Health - Morrisville, NC (Remote)** June 2024 - October 2024

*Data Scientist - Enterprise Data Science Team*

- Lead Databricks developer using Python and SQL for Length of Stay model development - *Linear Regression, Random Forest and Gradient Boosting*
- Developed an interactive SharePoint site for AI processes using LucidChart
- Participant of PRIME internship program - PRIME mentor for undergraduate interns

**Nationwide - Columbus, OH** January 2024 - May 2024

*Data Engineer Intern - Data Auditing and Analytics (DAA)*

- Gathered Raw Requirements from the FinTech Data Ingestion Team.
- Investigate potential data sources to validate for completeness and accuracy
- Developed Python and SQL code in the Databricks platform for data manipulation
- Built timelines and estimates for the curation workflow in Databricks
- Tested curations and BI tool connections to ensure business partners can connect

**Georgia Tech Research Institute (GTRI)** May 2023 - July 2023

*Research Intern, Electro-Optical Systems Laboratory (EOSL)*

- Developed a Convolutional Neural Network (CNN) for the Enhanced Audio Recognition System (EARS) project to perform binary classification on vehicle images, returning a validation accuracy of 98% when distinguishing wheeled vs. tracked vehicles.

- Developed a Temporal Convolutional Network (TCN) algorithm to compare against the CNN algorithm.
- Developed code in Python (.py) and Jupyter Notebooks (.ipynb) with easily readable documentation.

**Intel Corporation - Remote** July 2022 - September 2022
*Research Intern, AI Healthcare - Drive Program*
- Developed a Convolutional Neural Network (CNN) algorithm to apply image segmentation techniques to Brain ultrasound images for identifying tumors.
- Developed code in Intel's OneAPI platform for developers in practical/training regimens for future use.

**Intel Corporation - Remote** July 2021 - September 2021
*PhD Researcher, AI Policy - Emerging Technology Program*
- Conducted Literature Reviews using Prisma's Methodology revolving around emerging technology trends.
- Composed a survey paper on Emerging Technology trends with plans to be published.
- Presented a 20-minute talk on Emerging Technology trends to chief division leaders.

**TIAA - Charlotte, NC** July 2018 - October 2019
*Technical Associate/Rotational Program*
Rotation 1 - *Systems Analyst, Business-Tech Liaison*
- Managed the DBMS using Kafka Apache to migrate TIAA's old data lake to the new pipeline.

Rotation 2 - *Automation, Quality Assurance*
- Responsible for monitoring the enterprise's failed web pages and then implementing a plan to adjust systematic processes per user to ensure quality service.

Rotation 3 - *Software Engineer, Full Stack Developer*
- Developed chatbots/virtual assistants for TIAA's digital retirement platform.
- Developed Natural Language Processing (NLP) algorithms for machine translation of various spoken languages within the digital retirement platform.
- Scrum Master for small development cycles, leading other interns and junior developers.

**Bank of America - Charlotte, NC** May 2017 - August 2017
*Global Information Security Analyst Intern - Identity Access Management unit*
- Selected to intern in a highly competitive program with only 25 analysts across the GIS platform.
- Managed the Identity Access Management (IAM) system, Badge Access, to ensure all new and current users had all proper privileges.

**Nationwide - Columbus, OH** May 2016 - August 2016
*IT Data Scientist Intern - Data Management and Analytics unit*
- Designed the framework of data facsimiles to reference any given scenario of assembled data, which helps decrease the time it takes to file an Insurance claim by 15%

- Built complex JS frontends – Chrome, Electron, Safari, and Firefox. Experience with Node.JS development

## FELLOWSHIP AWARDS/SCHOLARSHIPS

**NSF, LSAMP Bridge to doctorate Fellowship ($34,000)** August 2022
*Clemson University*
*Ph.D. Computer Science*

**Ricoh Fellowship ($20,000)** August 2022 - May 2024
*Clemson University*
*Ph.D. Computer Science*