Philip "Mac" McCarthy Howe

Cumming, GA | Mac@machowe.com | (770) 718-6920 | linkedin.com/in/machowe | github.com/ItsMacto | machowe.com

Education

Clemson University Honors College   December 2025
Bachelor of Science in Computer Science   3.86 GPA
Double minor in Artificial Intelligence and Cyber Security | Emphasis in Data Science and Artificial Intelligence
- 2x President's List, 2x Dean's List
- Hand-picked by course instructor to develop final project taken by over 200 students in C++

Technical Skills

- Advanced- Python, SQL, PL/ SQL, Oracle APEX, Scikit-learn, PyTorch, NumPy, Pandas, C++, C, VBA, Swift, Excel, JMP, Git
- Proficient- Java, JavaScript, TypeScript, NextJS, Redux, SocketIO, React, C#, Firebase, Azure Cloud, Docker, CSS, HTML

Experience

Advanced Imaging Lab - Research Assistant   Oct 2024 – Present
- Designing and implementing **deep learning** models for generative and computer vision tasks, advancing processing capabilities
- Innovating new unsupervised video denoising pipeline utilizing transformer architecture in **PyTorch** on **Palmetto Supercomputer**

TRACE Research Lab - Research Assistant   May 2024 - Present
- Researching collaboration between artificial intelligence agents and human users to improving teamwork
- Focus on innovating methods to aid in Human-AI teaming in first responder and high-risk scenarios
- Developing a backend server using **TypeScript, NextJS, Redux, SocketIO, and React** to facilitate quantitative research

Arc-Two Consulting, Inc. – 2x Software Developer Intern   May - Aug. 2023 and May - Aug. 2024
- Software Development of a Customer Relationship Management (CRM) tool for utility industry asset accounting
- Led multiple full stack projects developing production features and managing the software design cycle
- Engineered 40+ production Oracle SQL database models, enforcing normalization and prioritizing scalability
- Developed a frontend interactive interface for a customer defined rules product and a backend API that can validate custom rules on over 10,000 data entry's with < 1 second response time
- Created internal data creation tool cutting time from hours to 10 minutes, saving business users up to 96% of this time
- Skills: **PL/ SQL, Oracle APEX, VBA, Cloud Development, Security, Big Data, Java Script, CSS, Git**

LTN Global - Software Developer Intern   Jul. - Aug. 2022
- Configured company's virtual machine image with GRUB creating custom animated boot loading screen
- Authored documentation and visualization of code repository cutting onboarding time by 30%
- Contributed to daily standup meetings, enhancing communication and problem-solving skills
- Technologies: **Python, Linux, Virtual Machines, Git, Docker, Confluence, Jira**

Projects

Students Performance Analysis Using Machine Learning
- Developed a machine learning pipeline to predict students' GPA, utilizing **data preprocessing, stratified sampling, feature engineering, and visualization** achieving a Root Mean Squared Error (RMSE) of 0.085 and an R^2 of 0.991
- Built and optimized multiple models (Linear Regression, Decision Tree, Random Forest) using Scikit-learn, improving prediction accuracy through hyperparameter tuning with GridSearch and cross-validation

Hackathon Competition - Developed Native iOS App   Mar 2024
- Awarded Best Implementation at CU HackIt (1st out of 62 teams) for developing a native iOS app using Swift, Firebase, and Firestore, integrating Google Auth and Google Places API for real-time group decision-making
- Led frontend development, designing an intuitive UI for restaurant selection and voting with SwiftUI

Accomplishments

Theta Tau Professional Engineering Fraternity   Apr. 2024
- Focused on service, professionalism, and brotherhood; Serving on Professional Development Committee
- Worked on several community service events such as Adopt a Highway and STEM outreach night

Eagle Scout, Boy Scouts of America   2015 - 2021
- Spearheaded community services project benefiting local environment; led over 100 hours of service
- Inducted into Boy Scouts Honor Society, Order of the Arrow, achieving second highest rank