

# Philip “Mac” McCarthy Howe

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## Education

### Clemson University Honors College

December 2025

#### *Bachelor of Science in Computer Science*

3.86 GPA

*Minor in 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, NumPy, Pandas, C++, C, C#, VBA, Linux, Databases, Git,
- Proficient- Java, JavaScript, TypeScript, NextJS, Redux, SocketIO, React Swift, Firebase, Firestore, Docker, CSS, HTML

## Experience

### TRACE Research Group - Research Assistant

May 2024 - Present

- Researching collaboration between artificial intelligence (AI) agents and human user to improving teamwork
- Focus on innovating methods to facilitate 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<sup>2</sup> of 0.991
- Built and optimized multiple models (Linear Regression, Decision Tree, Random Forest) using Scikit-learn, improving prediction accuracy through hyperparameter tuning with GridSearchCV and cross-validation

## Accomplishments

### Theta Tau Professional Engineering Fraternity

Apr. 2024

- Focused on service, professionalism, and brotherhood; Working on Professional Development Committee
- Worked on several community service events such as Adopt a Highway and STEM outreach night

### 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 front-end development, designing an intuitive UI for restaurant selection and voting

### 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