Jack **Carroll**

SOFTWARE ENGINEER · RESEARCHER

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Summary

Experienced software engineer and researcher graduating from Clemson University in May 2021. My fascination for technology is what drew me into computer science in the first place, and being such a dynamic field encourages me to continue learning something new every day. I am passionate about helping others and attempting to make the world a better place - and I think software is one step closer to achieving that goal.

Education

Clemson University Calhoun Honors College   *Clemson, SC*

B.S. IN COMPUTER SCIENCE   *August 2017 - May 2021*

- Minor in Economics
- Cumulative GPA: 3.64

Academic Magnet High School   *Charleston, SC*

HIGH SCHOOL DIPLOMA   *August 2014 - May 2017*

- #1 Nationally Ranked Public High School by US News
- Weighted GPA: 4.45

Work Experience

Ohanga   *Providence, RI*

SOFTWARE ARCHITECT (CONTRACT)   *May 2020 - Present*

- Ohanga is a pre-seed startup creating a new approach to creativity through a hyper-local platform for art, artisans and aficionados.
- First engineer hired at Ohanga - currently in the process of creating our beta platform from scratch.
- Over the summer of 2020, I managed five engineering interns, serving as a project manager, performing code reviews, assisting with the debugging and development processes, etc.
- I have also created and tested multiple prototypes with potential platform users, gathering and iterating on feedback received as well as assisted in high-level design decisions involving architecture, standards, and tools.

Barclays Investment Bank   *Whippany, NJ*

SUMMER TECHNOLOGY ANALYST   *July 2020 - August 2020*

- 10 week internship shortened to 6 weeks due to COVID-19. I was cloud software engineering intern within the investment bank CTO group.
- I automated the provisioning of resources using AWS CloudFormation and allowed for extensive security reporting of provisioned resources using the open source Python libraries: cfn-lint, cfn-guard, cfn-nag, taskcat, and diagrams.

Clemson University   *Clemson, SC*

TEACHING ASSISTANT   *January 2019 - Present*

- I have been a teaching assistant for Computer Programming I, Algorithms and Data Structures, Computer Programming I (for engineers), and Top Rope Climbing. I assist students with lab and class material, as well as hold office hours and grade assignments.

Clemson University   *Clemson, SC*

RESEARCH ASSISTANT   *January 2020 - Present*

- I work in the Team Research Analytics in Computational Environments (TRACE) Lab developing artificial intelligence agents as well as the Network Systems and Control lab developing autonomous systems where I assist doctoral students with writing papers for submission to conferences and scholarly journals.

Eleos Technologies   *Clemson, SC*

SOFTWARE QA TESTER   *November 2019 - July 2020*

- I created and optimized manual quality assurance test cases for mobile applications and cloud services as well as creating tooling scripts for use by our customers.

Blackbaud   *Charleston, SC*

SALESFORCE DEVOPS INTERN   *May 2019 - August 2019*

- I was a software engineering intern on the digital team in Corporate IT where I created an access broker service allowing customers on deprecated product versions to easily transition over to the latest versions.

Clemson University   *Clemson, SC*

RESIDENT ASSISTANT   *August 2018 - May 2019*

- I was in charge of sixty undergraduate freshman students, assisting them in acclimating to life in college.

Skills

Amazon Web Services	EC2, ELB, S3, RDS, IAM, Cognito, Lambda, DynamoDB, Route53, SNS, SQS, ECS, Amplify, API Gateway, CloudWatch, CloudFormation, CloudTrail, VPC, Key Management Service, Secrets Manager
Programming	Python, C++, C#, C, LaTeX, JavaScript, Node, Bash, Powershell
Frameworks	Angular, Vue, React, React Native, Electron, Django
Software Development	Git, Scrum, DevOps, Machine Learning, Data Science, Quality Assurance
Computer Science	Algorithms, Data Structures, Research

Publications

1. **Schelble, B. G., Canonico, L., McNeese, N., Carroll, J., Hird, C. (2020). Designing Human-Autonomy Teaming Experiments Through Reinforcement Learning. Proceedings of the Human Factors and Ergonomics Society 2020 Annual Meeting 64.**

2. **Blackwell, Calvin and Carroll, Jack, Minecraft Economics: A Study of Wealth Inequality in a Virtual World (May 25, 2018). http://dx.doi.org/10.2139/ssrn.3185048**

Projects

Data Science Clemson Senior Captsone *Clemson, SC*

CLEMSON UNIVERSITY CENTER FOR WORKFORCE DEVELOPMENT *January 2020 - May 2020*

- The capstone project is an opportunity for students to work on a real-world project with a sponsoring company.
- Our team of four worked with CUCWD to create a standalone platform that analyzes millions of data points from their system and give valuable insights to employees and course instructors on ways to improve the system.

GrAIder *Clemson, SC*

PERSONAL PROJECT *August 2018 - Present*

- The goal of the project was to to use machine learning and bash scripting together to prototype out an automatic grader for tests, projects, assignments, etc. in computer science courses that eventually could be expanded to other disciplines.
- During the last two years, I have created user interfaces, trained machine learning models, and wrote back-end services.
- I eventually want to be able to launch this project as a fully functioning service for use by professors and teaching assistants in classrooms around the world.

CUHackit TrainAR *Clemson, SC*

CLEMSON UNIVERSITY *January 2019*

- We created an app that integrated with sensors to indicate if the user is performing exercises with proper form.
- Our solution was an augmented reality app that worked together with an Inertial Measurement Unit connected to an Arduino 101.
- Our prototyping exercise was push-ups, so the AR app built in Unity with ARCore would place hand markings on the floor to indicate the starting position.
- The sensors on the chest and lower back would then calculate if the upper body maintained a proper correct angle during the rep.

AWS Cloud-A-Thon BPA *Clemson, SC*

AMAZON WEB SERVICES *April 2018*

- We wanted to create a tool that those with these visual impairments can use to identify just about anything in front of them.
- Our idea for this solution was to create an app with the simplest UI imaginable: one button. The press of this button would then trigger a reading of everything that the phone camera sees.
- This idea was realized by creating a React Native mobile app that integrated with Amazon Web Services solutions that interpreted a photo from the camera and converted results to text-to-speech.
- This text-to-speech identified everything from objects, OCR text, faces, and expressions, with each category read separately.
- Our app earned 2nd place during this cloud-a-thon.

Extracurriculars

CUHackit *Clemson, SC*

HEAD OF WEB DEVELOPMENT *2019 - 2021*

- Led web development efforts for the hackathon websites

CECAS Student Advisory Board *Clemson, SC*

COMPUTER SCIENCE REP AND TREASURER *2017 - 2019*

- Planned and executed events to continually improve the College of Engineering, Computing and Applied Sciences at Clemson University.

Association for Computing Machinery *Clemson, SC*

FORMER WEBMASTER AND MEMBER *2017 - 2021*

- Maintained and updated the website for the clemson chapter of the organization.