Keegan Bruer

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PERSONAL STATEMENT

As a Full Stack, DevSecOps, and Machine Learning Engineer with experience in diverse projects, I have a strong background in delivering secure, high-quality software empowered by AI. At CyDeploy Inc, I managed IT and IoT functional testing, developed .NET applications for Robotic Process Automation, and managed microservice deployments on cloud environments. In my part-time role at Warlock Tabletop, I designed, developed, and deployed secure software applications, while ensuring seamless integration and collaboration across the organization. My expertise in both roles demonstrates my ability to contribute effectively to any project, driving success and innovation.

PROFESSIONAL EXPERIENCE

CYDEPLOY INC - BALTIMORE, ML

Machine Learning Engineer
July 2022 – Present

Key Accountabilities:

- Managed all Machine Learning ventures, including IT and IoT functional testing, to ensure the efficient and successful deployment of projects.
- Trained and deployed a fine-tuned OpenAI GPT-3 model that relates a user's input to a set of tests performed, thereby streamlining the testing process for our clients.
- Spearheaded the development of an internally hosted fine-tuned LLM, reducing the risk of data leaks.
- Enforced consistent architectural design patterns across the organization while refactoring growing codebases.
- Oversaw the development of a .NET application focused on Robotic Process Automation, which led to improved process efficiency and reduced manual labor.
- Developed systems to analyze IoT device network traffic to ensure proper device functionality and enhance overall system security.
- Constructed automated CICD pipelines utilizing GitHub Actions, reducing time to deployment.
- Built Microservices for deployment into Kubernetes Clusters on multiple cloud environments, including AWS, Azure, and GCP, ensuring efficient deployment of systems across multiple cloud platforms.
- Mentored a team of three interns using my prior full-stack development experience to enhance their skills and ensure the successful completion of projects.
- Participated in the Google Startup Accelerator program, attending workshops and utilizing a diverse group of mentors to increase the quality and reliability of our ML model, leveraging my knowledge of GPT-3 and OpenAI API to enhance the program's success.

WARLOCK TABLETOP

Full Stack / DevSecOps
Jun 2019 - Present

Key Accountabilities:

- Designed, developed, tested, and deployed software applications that directly impact the organization's ability to deliver products and services.

- Ensured security and reliability by focusing on DevSecOps practices, protecting customer data and maintaining trust.
- Collaborated with cross-functional teams for seamless integration of applications and infrastructure, improving efficiency and effectiveness across the organization.
- Utilized full stack development skills to create and maintain both front-end and back-end of applications, delivering high-quality software meeting customer and organization needs.
- Worked with various programming languages, frameworks, and libraries to build scalable, efficient, and user-friendly applications.
- Effectively collaborated with other teams and stakeholders, leveraging understanding of both user experience and underlying technical infrastructure for designing applications with a strong focus on usability and performance.
- Constructed CICD pipelines utilizing Jenkins, automating the release of multiple build versions.
- Drove business impact as a DevSecOps Engineer with strong full stack development skills, contributing to company growth, innovation, and customer satisfaction.

UNIVERSITY OF NORTH CAROLINA
NSF Research Assistant
Aug 2020 – May 2022

Key Accountabilities:

- Developed a ROS package that effectively synchronizes and processes observations from multiple cameras.
- Collaborated with a PhD student from the University of Georgia to acquire and test datasets, refining the performance of the ROS package.
- Utilized the PCL ROS package to perform precise spatial registration on a series of point clouds.
- Generated a Microsoft Kinect dataset of point clouds using the Gazebo simulator, providing additional data for testing and training machine learning models.
- Experimented with multiple machine learning algorithms, including Neural Networks and Gaussian Processes, before ultimately settling on a custom Deep Learning algorithm that combines both techniques - the Neural Processes algorithm.
- Developed a custom Decoder Model using the Neural Processes algorithm's Encoded and Aggregated representation of spheres, with the input of a ray, to produce the point of intersection.
- Incorporated Ray Tracing in the Decoder Model to accurately determine the closest intersection of a ray with a set of spheres.
- Implemented Simulated Annealing and Particle Filter techniques to facilitate training of the Neural Processes algorithm.
- Demonstrated mastery of key tools and technologies including ROS, PCL Spatial Registration, Torch, PyTorch, and GPyTorch.

UNIVERSITY OF NORTH CAROLINA
Peer Tutor
Aug 2019 – May 2022

Key Accountabilities:

- Provided instruction and guidance to students in introductory and intermediate-level computer science courses.
- Reinforced foundational computer science concepts and programming language proficiency, including Python, Processing, R, C, and Java.
- Developed expertise in code review and debugging through consistent interaction with students, improving attention to detail and communication skills.

- Enhanced debugging skills through ongoing engagement with students encountering issues in a variety of programming languages.
- Demonstrated strong proficiency in debugging, code review, and programming languages such as C, R, and Processing.

UNIVERSITY OF NORTH CAROLINA
Undergraduate Researcher
Aug 2018 – Dec 2019

Key Accountabilities:

- Employed Tensorflow's Neural Networks implementation to develop a model that accurately analyzed how specific facial features correlate with generally perceived attractiveness.
- Analyzed a dataset of faces that had been generated using FaceGen and rated on a scale of 1-5 by a community.
- Demonstrated proficiency in Neural Networks using Tensorflow, AutoHotKeys, and data analysis techniques.

EDUCATION

Bachelor Degree of Computer Science, University of North Carolina at Asheville

TECH STACK

Languages: Javascript, Typescript, Python, C, C++, C#, Java, HTML, CSS, Bash, Linux Shell, Scripting, YML, XML, JSX, Processing, R and AutoHotKeys.
Machine Learning Libraries: Tensorflow, Torch, PyTorch, GPyTorch, OpenAI API and SageMaker.
Backend/Desktop Frameworks: NodeJs, ExpressJs, SpringBoot, Socket.io, Google Auth Library, MIMEJs, ROS, PCL and Microsoft .NET Core.
Databases/ORMs: MongoDB, DynamoDB, MySQL and REDIS,
Front End Technologies: ReactJs, React Native, AngularJs, JQuery, Bootstrap, Redux, Thunk and NextJs.
IDE Tools: VSCode, Eclipse, Jupyter Notebook, Vim and Emac.
Project Management/Version Control: JIRA, GIT, GitHub, Docker, Agile and Scrum.
Platform Automation Jenkins, Terraform, GitHub Actions, and Ancible
Deployment Technologies/Platforms: AWS, DigitalOcean, Kubernetes, Helm Charts, Docker Swarm and Webpack.
Testing Tools/Environments: MochaJs, ChaiJs, JUnit, Jest, React-Testing-Library, Storybook, Selenium and Playwright.

AWARDS AND ACHIEVEMENTS

UNC Asheville ACES Scholarship
UNC Asheville Dean's List - Fall 2018, Fall 2019 and Spring 2021.
Pisgah Scholarship, Rotary
Youth Leadership Award
FRC Engineering Inspiration Award
FRC Rookie All Star Award