CAROLINE ELIZABETH HAOUD

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EDUCATION

Columbia College, Columbia University (CU)

Computer Science and Neuroscience, Bachelor of Arts — Expected: May 2025

- **Scholarships and Awards:** Ron Brown Scholar, Gates Millennium Scholar, QuestBridge Scholar, Dean Scholarship Recipient, Toyota Fund Recipient, Management Leadership for Tomorrow Software Engineering Career Prep Fellow, George Harvey Scholar, Jackie Robinson Scholarship Finalist, Burger King Scholar, AWS AI & ML Scholarship Recipient
- **Organizations:** Alpha Kappa Psi Business Fraternity, America Needs You, ColorStack, Rewriting the Code, Women in ML, Columbia Organization for Rising Entrepreneurs, Columbia Daily Spectator, Columbia Financial Investment Group

Cornell Tech, Cornell University, Online certification in graduate-level Machine Learning course — Aug 2023

SKILLS

- **Languages**: Python, Java, C#, Bash, React.js, React Native, JavaScript, HTML, CSS, SQL
- **Tools**: Git, Github, Visual Studio, Visual Studio Code, Microsoft Office Suite, Node, Figma
- **Environments**: Docker, Linux

PROFESSIONAL EXPERIENCE

Senior Engineering Manager and Software Engineer, Columbia Daily Spectator (CDS) | *Collaboration, SWE* — Sep 2021 - Present

- Led and managed 4 developers to create the 2023 Homecoming special edition using React and 5 developers to create the 2023 Black History month special edition using React through Github issue creation, weekly stand ups and two week sprints
- Created a front-end carousel feature for top news stories, bookmark functionality using async storage and integrated notifications for CDS's iOS and Android home pages using React Native, Expo API and OneSignal
- Built full-stack web app using React.js, Node.js, and MongoDB that imports and deletes Columbia Spectator sources and migrated app to ArcPublishing

Software Engineering Intern, Microsoft | *Backend Engineering, Infrastructure Engineering, C#, Unit Testing, .NET Framework* — May - Aug 2024

- Built artifact translation capability layer between different orchestration systems in Azure
- Architected and implemented a robust Azure deployment automation system, featuring custom generators for rollout specifications and service models, with built-in error handling, JSON serialization, and integration with Azure Resource Manager templates, streamlining the deployment process for complex cloud infrastructures
- Developed and implemented a C# REST client for Azure services, incorporating authenticated GET and POST API requests to manage rollouts, retrieve deployment statuses, and cancel ongoing rollouts. Leveraged Azure Resource Manager templates and handled complex JSON serialization to streamline the end-to-end deployment configuration and management process
- Engineered an Azure artifact registration system using C# and .NET, featuring asynchronous operations, secure authentication, and integration with Azure Deployment Express, enabling streamlined and error-resistant cloud resource management
- Developed comprehensive unit tests for Azure deployment components using MSTest framework. Tests covered JSON serialization/deserialization, rollout metadata properties, orchestrated deployment steps, and service model attributes, ensuring accurate configuration of Azure service rollouts and resource definitions
- Designed secure certificate retrieval system using Azure Key Vault, implementing asynchronous C# methods to access and process X509 certificates with proper error handling and Azure command line interface authentication

Break Through Tech AI Studio Project Fellow, Accenture | *Project Management, Teamwork, Data-Driven Decision Making* — Aug - Dec 2023

- Collaborated with 4 interns to help Accenture's business client with product strategy, marketing and location recommendation for opening a series of 5 coffee shops throughout New York City
- Developed a regression model to identify the optimal location for opening the first coffee shop and leveraged this model to measure against competitor coffee shops' popularity and quality based off of Yelp metrics
- Built a sentiment analysis NLP model on Yelp reviews by identifying key words to learn what New York customers most commonly like and dislike when visiting coffee shops to inform specialty menu item selection

New Technologist Intern, Microsoft x Cyborg Mobile | *Agile Software Development, Product Management, Innovation* — Jun - Aug 2023

- Investigated a problem of interest to Microsoft with 4 interns, progressing through the entirety of the software development life cycle from selecting a problem space, conducting user research, creating a product management specification and building a prototype full-stack web in React and using APIs such as OpenAI's ChatGPT and DALLE-2

Undergraduate Research Assistant, **Zuckerman Institute |** *Hypothesis-Driven Experimentation, Python, Machine Learning* — Jan 2017 - Jan 2023

- Developed a Python tool by utilizing machine learning to study different learning rates in fly brain regions, mapping neural networks and generating 3D renderings of neural connections using a data set of 20k neurons
- Contributed to PsychRNN, a python package that makes recurrent neural networks more accessible for non-ML research scientists
- Conveyed experiment findings through data visualizations using Python libraries pandas, NumPy, Matplotlib and seaborn and presented findings at the National Undergraduate Research Conference at Harvard University
- Conducted hypothesis-driven experiments, informed by current neuroscience literature, in areas such as exploring Alzheimer's Disease in olfaction in mouse models, investigating the neural mechanism behind egg-laying behavior in female fruit flies, and determining learning rates of the fruit fly neural connectome