

# Thomas Carmichael

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## WORK EXPERIENCE

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- **IBM** June 2021 – Present  
*Cloud Software Developer* Austin, TX
  - Currently working in IBM Cloud org. Developing microservices, DevSecOps tools, and IBM Cloud SDKs.
- **PROS** January 2020 – June 2021  
*Software Engineer* Houston, TX
  - Member of the core Data Platform team. At a high level, providing data warehousing, data processing, and data flow between teams.
  - Developed and maintained NodeJS/TS microservices. Deployed microservices using GoCD, Docker, and Kubernetes. Ensured service availability with Azure logging and monitoring services.
  - Integrated TypeScript into Data Platform teams backend APIs. This allowed our front end team to consume backend types, which enabled us to catch errors before runtime.
  - Migrated Kubernetes helm charts from v2 to v3 and used Azure Kubernetes Service (AKS) to redeploy our services in each deployment realm.
- **UH CBL** May 2018 – September 2018  
*Graduate Research Assistant* Houston, TX
  - Coordinated version control for the Computational Biomedicine Lab (CBL) projects using GitLab, Git, and BibSync, an in-house bibliography syncing server. Managed CBL's blog, wiki pages, and website.
- **NASA** August 2017 – May 2018  
*Software Engineer Intern* Clear Lake, TX
  - Designed a searching algorithm and GUI using JavaScript and JQuery for 10 members of the Operating Systems and Security Division. This tool allows the team to coordinate tasks more effectively.
  - Solved an ongoing security vulnerability in a legacy code and received a personal email from the department's president for helping to resolve this issue.

## EDUCATION

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- **University of Houston** December 2019  
*Master of Science in Computer Science; GPA: 3.7* Houston, TX
- **University of Texas at Austin** December 2014  
*Bachelor of Science in Human Biology; GPA: 3.4* Austin, TX

## PUBLICATIONS

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- Dai, G. Paluri, P. **Carmichael**, T. Cheng, A. Miiikkulainen, R. "Leveraging the Selfless Driving Model to Reduce Vehicular Network Congestion", 40<sup>th</sup> International IEEE Real-Time Systems Symposium (RTSS). Hong Kong, China. December 2019.

## PROJECTS

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- **Material Prediction Using Unsupervised Machine Learning:** Primary Language(s): Python
  - Predicted object material types using K-Means Clustering on WiFi and BLE signal data. Data Visualizations as well as code for predictions are available on GitHub.
- **Building a UNIX Shell:** Primary Language(s): C, C++
  - Created a custom shell in C/C++. Building a personal shell allows for terminal customization options as well as an understanding of parallel processes, multithreading, and concurrency.

## PROGRAMMING SKILLS

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- **Proficient:** Golang, JavaScript, TypeScript, Python, MongoDB, CosmosDB, CouchDB, CloudantDB, Redis, Apache Kafka, REST, Linux, Git, Docker, Azure Cloud, IBM Cloud
- **Familiar:** ReactJS, Redux, NextJS, PostgreSQL, Scala, Java, Apache Spark, Kubernetes, GoCD, Tekton, Jenkins, RDBMS, SQL/mySQL, DataBricks