James Barnes

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Experience

Software Engineering Specialist, Telstra — 2023 – *present*
- Developed a novel, declarative, end-to-end, test-automation framework for a large CRM system,
- Refactored existing test-automation system and associated APIs for ease of development,
- Translated business requirements into new products and orchestration plans on a large CRM system,
- Developed billing- and orchestration-related Java Spring Boot APIs

Software Engineering Intern, Telstra — *Summer* 2020 – 2021
- Developed new features for the MyTelstra apps,
- DevOps responsibilities relating to the MyTelstra apps, including deployments,
- Created quality assurance tests for the MyTelstra app (Android, iOS, web)ı

Academic Tutor & Demonstrator, The University of Melbourne — 2019 – *present*
- Tutored content on introductory programming (Python), declarative programming (Haskell, Prolog), and theoretical computer science (DFAs, NFAs, regex, parsing, Turing machines, computability),
- Delivered tutorial content to postgraduate, first-year & final-year undergraduate students,
- Graded assignments, projects, and exams of over 1500 students,
- Developed build tools to automate the creation of teaching materials

Head Academic Tutor, The University of Melbourne — 2022
- Created assignment, tutorial, and exam material on theoretical computer science,
- Assisted in the delivery of course materials in a lecture format

Data Analyst, WorkSafe Victoria — *Summer* 2019 – 2020
- Developed automated tools to scrape, clean, and validate confidential and public company records

Technical Skills

Java (Maven, Spring, Spring Boot), JavaScript (Node.js), TypeScript, Python (Pytorch, Numpy), C, C++, Haskell, Prolog, Git (GitHub, GitLab), Bamboo, Postman, Cucumber (Gherkin), agile methodologies (JIRA), SalesForce (Apex, Vlocity)

Education

Master of Computer Science, The University of Melbourne — 2020 – 2022
- **Grade:** First Class Honours (87.800 WAM)
- **Thesis:** Higher-Order Programming in Wybe *(link)*
- Developed a higher-order extension to an existing language, Wybe
- Formalised the Wybe type system
- Benchmarked the performance of the language extension against the existing language, showing negligible performance overhead

Bachelor of Science, The University of Melbourne — 2017 – 2019
- **Grade:** First Class Honours (83.000 WAM)
- **Major:** Computing and Software Systems
- Created a web-based family heirloom register, allowing for users to upload and share their family heirlooms with other users
- Produced formal design documentation

Awards

UniHack'21 First Place, Scalr.io *(link)* — 2021
- First-prize winning UniHack'21 submission built with a team of five in 48 hours,
- Created a low-code platform for users to upload existing machine learning models, automatically creating REST endpoints that serve as an interface to said models,
- Scalable infrastructure that expands with users' requirements
- Simple web-based UI

Languages

English (*native*), Mandarin Chinese (*basic*), Indonesian (*basic*)

Volunteering

Student Representative: Master of Computer Science — 2022

Student Representative: Distributed Algorithms & Advanced Theoretical Computer Science — 2020 – 2021