Bryan Hitchcock

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Experience

Microsoft: Software Engineer   Jun 2020 - **Present**
- Commerce & Ecosystems (Cloud & AI).

MaxCogito: Software Engineer, Intern (CSE 498 - Senior Capstone Project)   Jan 2020 - Apr 2020
- Created cloud microservices for analyzing and identifying content flowing through clients' email servers, potentially saving an enormous amount of money in non-compliance fees (e.g., GDPR violations).
- Designed and implemented robust REST API microservices in **Spring Boot** using **Java** for all administrative and processing-related tasks along with relevant PostgreSQL schemas.
- Developed an administrative website using Angular with TypeScript.
- Deployed back-end microservices on **AWS** EC2 instances connected via a discovery service and an API gateway.

Michigan State University: Compilers Teaching Assistant   Aug 2019 - Dec 2019
- Helped ~150 students design and implement their compilers in **Python** that stage through lexical, syntactic, and semantic analysis, intermediate language generation, optimization, and target code generation.
- Taught relevant CS theory: finite & pushdown automata, context-free grammar, regex, abstract syntax trees.

BS&A Software: Software Engineer, Intern   May 2019 - Aug 2019
- Developed an internal **TypeScript Angular** web app used by all ~180 employees to facilitate real-time collaboration, **saving ~$4,000/month** in Trello costs.
- Implemented the back-end RESTful API and web socket infrastructure using **C# ASP.NET Core**.
- Created robust integration testing infrastructure, resulting in ~95% code coverage.

Projects

Course Sniper   Apr 2019 - May 2019
- Created a **C#** WPF desktop application and an IoT CLI tool that automatically enrolls in planned courses whenever there's an available spot.
- Deployed IoT application targeting Michigan State University's scheduling system on a Raspberry Pi 3 B+.
- Enrolled in 4 "full" courses, potentially saving thousands of dollars in tuition costs.

SQLite Database   Jan 2019 - May 2019
- Created a SQLite-like database using **Python** that lexes, parses, and interprets SQL.
- Implemented joins, transactions, concurrency control, custom aggregate functions, collations, views, etc.

Skills

- **Languages**: Python, C#, JavaScript/TypeScript, C/C++, Java, Rust, SQL
- **Libraries & Frameworks**: OpenMP, MPI, Angular, Vue, Node.js + Express.js, NestJS, GraphQL, TypeORM, RxJS, Flask, ASP.NET Core, SignalR, Entity Framework Core, Spring Boot, Spring Cloud
- **Other**: Git, SOLID, Agile/Scrum, Linux, pytest, xUnit, Jest, Azure, Azure DevOps, Amazon Web Services

Education

Michigan State University: Computer Science, B.S. | GPA: 3.8/4.0   Grad Date: May 2020
- MSU Federal Credit Union Praxis Award 2020 for most technically challenging Senior Capstone Project.
- *Course Electives: Advanced C++ **(6 students invited)**, Biometrics & Pattern Recognition, Operating Systems, Distributed Computing, Computer Networks, Algorithm Engineering, Compilers & Interpreters, and Databases.*