Corbin Taylor

Software Development Engineer and Astrophysicist

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Skills

- **Front-End Technologies**: JavaScript (React, Redux, React Query, Jest, Cypress), Ruby, HTML, CSS
- **Back-End Technologies**: Java (Spring Boot, JUnit, Mockito), Python (NumPy, SciPy), C++, C, SQL, MongoDB, Kafka
- **Cloud Technologies**: AWS (S3, EC2, ECS, Lambda, RDS, DynamoDB), Docker, Kubernetes
- **Operating Systems, Servers, & Networking**: CLI, Shell scripting, Linux, OS X
- **Leadership & Communication**: Project planning, task delegation, collaborative problem solving, public speaking, and mentoring.

Work Experience

Capital One - Retail Bank Technology Nov 2022 - Present

Software Development Engineer

- Maintained Java Spring Boot and Kafka microservices on ECS and EC2 that consumed and published data for millions of financial transactions per day.
- Migrated consumer-facing API from a managed solution (ECS and RDS) to serverless (Lambda and DynamoDB).
- Automated team deployment processes that allowed for continuous delivery and reduced overhead for our legacy systems.
- Quickly remediated critical service vulnerabilities, securing sensitive customer data.
- Performed operations and development work that ensured our services were compliant with Federal regulation.
- Participated in team on-call rotation, mitigating problems quickly and minimizing customer impact.
- Mentored new and junior team members, helping them become familiar with team-specific technologies and best practices.
- Coordinated with third-party venders and led cross-team collaborations.

Amazon Web Services - AWS Security Jun 2020 - Nov 2022

Software Development Engineer

- Developed and maintained a mission-critical service used by tens-of-thousands of AWS employees to manage one million active AWS accounts.
- Contributed to the development and testing of a single-page web React-Redux application, as well as to the Java Spring and SQL backend.
- Initiated and led cross-team security improvement efforts, including migrating a Python-based auditing tool to native AWS.
- Researched and created recommendations for the handling of critical cryptographic credentials.
- Primary point of contact for collaboration between my service team and security auditing teams.

- Participated in the on-call rotation, root-causing and mitigating problems in a high-pressure environment.

University of Maryland - Department of Astronomy Jun 2014 - Jun 2020

Graduate Research Assistant

- Researched the properties of supermassive black holes and the Milky Way using computer simulations.
- Independently wrote scientific simulation and analysis software using Python and C++.
- Published multiple peer-reviewed articles in internationally-recognized scientific journals.
- Presented my work at professional conferences and universities in the US and Europe.

Leadership Experience

AWS Summer Software Development Internship May 2022 - Aug 2022

Lead Mentor

- Led meetings with software development intern 3 times per week where I would work to disambiguate goals, define action items, and develop Agile strategies to deliver results.
- Helped intern onboard to my team's tech stack and familiarize themselves with the internal AWS ecosystem.
- Gave constructive feedback to helped the intern's professional development and overcome initial setbacks.

GRAD-MAP Diversity Program May 2014 - Aug 2017

Team Member

- Led the preparation and teaching of a multi-day Python workshop.
- Helped prepare and manage week-long research workshops that helped minority students develop skills necessary for a STEM career.
- Collaborated with minority-serving universities and colleges in Maryland, Virginia, and D.C.

University of Maryland - Department of Astronomy Aug 2013 - May 2014

Graduate Teaching Assistant

- Led 50 minute discussions with hands-on demonstrations for two sections once a week with an average of 20-30 students per section.
- Mentored struggling students during and outside of my weekly office hours.
- Graded homework, in-class assignments, and exams in a fair and timely manner.

Education

University of Maryland College Park, MD

Ph.D. Candidate Astronomy & M.S. Astronomy *2013-2021*

- PhD unfinished due to COVID-19 and changing professional priorities.

University of Toledo Toledo, OH

B.S. Astrophysics & B.S. Pure Mathematics *2008-2013*

- Cumulative GPA: 3.81
- Graduated Magna Cum Laude with Physics Departmental Honors

Select Publications

- Taylor, C. and Reynolds, C.S. 2018b; *X-Ray Reverberation From Black Hole Accretion Disks With Realistic Geometric Thickness*, ApJ, 868, 109
- Taylor, C. and Reynolds, C.S. 2018a; *Exploring The Effects of Disk Thickness On The Black Hole Reflection Spectrum*, ApJl, 855, 120
- Taylor, C.; Boylan-Kolchin, M.; Torrey, Paul; Vogelsberger, Mark; and Hernquist, Lars 2016; *The Mass Profile Of The Milky Way To The Virial Radius From The Illustris Simulation*, MNRAS 461, 3483