Jacob Berwick

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EDUCATION

- **Oregon State University** — Corvallis, OR
  Bachelor of Science in Computer Science; GPA: 3.74 — *Sep. 2016 – June 2020*
    - **Coursework**: Rigorous coursework involving algorithms, data structures, object-oriented programming, statistical analysis, website development, mobile app development, databases, operating systems, networks, computer architecture, artificial intelligence, machine learning, and deep learning.

- **California High School** — San Ramon, CA
  High School Diploma; GPA: 4.20 — *Aug. 2012 – June 2016*

EXPERIENCE

- **Amazon** — Seattle, WA
  Software Development Engineer Intern — *June 2019 - Sep. 2019*
    - **Device Auditing Framework**: Developed an automated auditing framework for Device Beta Testing. Beta Devices being sent out to Beta Testers are automatically checked for errors instead of being manually checked. Additional audits were implemented to prevent device state from diverging in different services due to errors. Built in a way such that it is extendable for future functionality and created a pathway to proactively fix errors rather than just reporting them.
    - **Full Stack Development and Deployment**: Gained full stack development experience using Java for backend development and Ruby on Rails for the front end. End to end deployment involving creating a project design, feature development, publishing code reviews, stakeholder demo, and production deployment.
    - **DynamoDB**: Gained experience creating tables, reading and writing to tables, updating table entries, and leveraging data in both feature development and decision making.
    - **Workflows**: Created, edited, and configured workflows for my team's workflow engine to manage the step transitions for Beta Program Participants. This involved creating and/or changing steps, transition conditions, and automated actions.
    - **SQS and Event Subscription**: Published and consumed messages via AWS's SQS service. Used SQS queues to keep updated states, execute actions, transition workflow steps, and create new database entries.
    - **Teamwork**: Gained valuable experience working on a team in the industry. Attended meetings, team events, design document reviews, and participated in code reviews. Learned the importance of writing clean and well documented code with explicit function/variable names.

- **San Ramon Valley Unified School District** — San Ramon, CA
  Substitue Custodian — *Summer 2017 and 2018*

- **San Ramon Aquacats** — San Ramon, CA
  Swim Coach — *Feb. 2015 - Aug. 2016*

PROJECTS

- **An Algorithmic Trading Application for Financial Resilience**: Senior Capstone Project [In Progress]. Designing, developing, and testing an end-to-end algorithmic trading application. This includes data interfaces, portfolio manager, a strategy tester, a trade execution engine, a resilience manager, and a UI. The portfolio manager will rely on machine learning techniques to make investments. The resilience manager will use resilience analytics to ensure performance.
- **Pseudoknot Detection in RNA Sequences**: Used various machine learning techniques including decision trees, bagging, neural networks, and recurrent neural networks to determine if an RNA sequence contains a pseudoknot using various feature sets and the sequence itself.
- **Web Based Battleship Game**: Created a functioning web based game of battleship for either two players or one player and computer. Used Java for the backend and JS/CSS/HTML for the front end.

SKILLS

- **Languages and Technologies**: C/C++, Java, Python, Ruby, Javascript, SQL, SQLite, Git, Keras/TensorFlow, Pandas, Numpy, AVR Assembly

- **Other Skills**: Windows, Linux/Unix, and MacOS experience, building computers, problem-solver, analytical, quick learner.