I AM GROOT ("GROOT")

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SUMMARY

Full-stack Software Development Engineer at **Amazon** with **3 years** of experience building secure Amazon-scale **web applications** with Ruby on Rails, JavaScript - jQuery and ReactJS, **backend services** with Java, Kotlin, and **serverless applications** using AWS technologies - API Gateway, Lambda, DynamoDB, SNS, SQS, ElasticSearch.

EDUCATION

Arizona State University, *Master's (Thesis) in Computer Science*	May 2016
Anna University, *Bachelor's in Computer Science and Engineering*	Mar 2014

EXPERIENCE

Amazon, Inc., *Software Development Engineer II,* Compliance - Transaction Risk Management.   Dec 2017 – Present
- Implemented a **Self Service portal for non-engineers** (TPM's, Product and Compliance Managers) to automatically generate the code for **launching risk investigation** tools to different regions and marketplaces, reducing the engineering effort from **3 weeks to 0.5 days** (**96% reduction** in time consumed) for each new region, resulting in **3-year annualized savings** of **$350,000**.
- Implemented and launched risk investigation tools in **3 new regions** - Amazon Payments **UK**, Amazon Payments **Europe**, and Amazon Payments **India** enabling **18 types** of investigations for Amazon businesses to stay compliant with regulations.
- Designed and implemented clustered case support for investigating related merchants enabling investigations of up to **2800 sellers simultaneously** to be conducted and filed to regulatory bodies, resulting in a **savings of $12,000** per year.
- Migrated legacy search service to **AWS ElasticSearch** reducing page load times from **8 seconds to 3.4** seconds (**57% reduction**) and reducing hardware cost by **$6500** a year (**70% reduction** in cost).
- Conducted over **250 interviews** to hire Software Developers for Amazon, resulting in 82 successful hires. Currently a Bar-Raiser-in-training (BRIT) and working to ensure the quality of all new hires at Amazon.

Amazon, Inc., *Software Development Engineer,* Compliance - Suspicious Activity Monitoring.   Aug 2016 – Dec 2017
- Designed and implemented a pre-push hook to verify code before merging with live pipelines that reduced pipeline failures from **24 failures** a month to **11 failures** (**54% reduction** in failures) a month.
- Implemented and launched support for Suspicious Activity monitoring, Denied Party Screening, Identity verification and TIN verification.
- Designed and implemented a **Bulk report generation and download** feature, reducing investigation time from **9 hours** to **under 6 minutes** (**98% reduction** in time consumed) resulting in cost savings of **$30,000** per year.
- Received **"Truth Seeker" award** for actively working to **reduce operational cost** of software.

Mozilla Corporation, *Firefox Accounts Engineering Intern.*   Summer 2016
- Engineered the infrastructure for performing reverse geo-lookups to accurately detect the login location of a user, and redesigned the login emails to showcase this login history to the user (merged in Firefox-67 used by **~100 million** users).
- Designed a **Geolocation-based profiling** mechanism to maintain login history and detect and flag anomalous logins.
- Designed the user interface for displaying password strength to the user, with live feedback as they enter the password.

Mozilla Corporation, *Cloud Services Intern.*   Summer 2015
- Designed and developed a **2-Factor Authentication system** for **Firefox** Accounts using **Node.js** with **Google-Authenticator**, and **SMS** as a backup 2nd factor.
- Implemented a **Password Strength Checker** for **Firefox** Accounts, using a **Bloom Filter** that maintains a list of common password hashes, that got merged in Firefox-41 (used by **~90 million** users).
- Deployed an **HTML parser** to scan generated HTML pages and E-Mail translations and remove **malicious translations** to prevent **cross-site scripting** vulnerabilities, in Firefox-40 train.

TECHNICAL SKILLS

Technologies: HTML, CSS, JavaScript, Ruby on Rails, Java, Kotlin, XML, Sass.
AWS Technologies: Lambda, API Gateway, DynamoDB, ElasticSearch, SQS, SNS, Network Load Balancer.
Frameworks/Libraries: ReactJS, SemanticUI, jQuery, Bootstrap, jQueryUI, Mocha, Sinon, ESLint, Chai.

PERSONAL PROJECTS

Thesis on E-Mail Header Injections – Arizona State University.   Fall 2015 – Spring 2016
- Designed a black-box approach to detect E-mail Header Injection vulnerabilities in a web application.
- Developed a system to crawl the web and automatically detect E-mail Header Injection vulnerabilities.
- Used this system to crawl **1 million forms** and test them with E-mail Header Injection payloads. Discovered **673 vulnerable URLs** across 296 domains.

GitChecker   Dec 2015
- Created a program using GitHub's API to track and analyze my coding patterns, the languages I code in, the average number of open-source projects I contribute to, the average number of lines I write, and the average amount of time I spend coding each year**.**
- This allowed me to analyze which languages I feel most comfortable with and which ones I needed to focus more on. Results of this analysis can be found at: http://tda.github.io/HTMLJS-GithubAPI/.

CONFERENCE TALKS AND WORKSHOPS

Webdevcon Amsterdam 2019 - *Amazon's web developer conference* — Jul 2019
· Presenting an advanced talk on using React hooks in production at Amazon to 300 Amazon developers.
· Conducting a workshop for 120 Amazon developers on Building Serverless Applications with AWS.
· Conducting a workshop for 120 Amazon developers on using GraphQL to build production services at Amazon.

Webdevcon Seattle 2019 - *Amazon's web developer conference* — May 2019
· Presented an introductory talk on React hooks to 1500 Amazon developers to promote adoption of Hooks across Amazon.
· Conducted a workshop for 105 Amazon developers on Building Serverless Web Applications with Native AWS.

Webdevcon Edinburgh 2018 - *Amazon's web developer conference* — Jul 2018
· Presented a talk on using CSS Grids in production to 160 web developers.

Zoncon Seattle 2018 - *Amazon's premier security conference* — May 2017
· Presented a talk to 1200 engineers on E-Mail header injections and how to prevent it in Amazon systems.