**HANNA GROVER UPDATED RESUME**

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**EDUCATION:**

* **San Jose State University- San Jose, CA January 2019-December 2020**

M.S. Computer Software Engineering (Specialization: Enterprise Software Systems) GPA: 3.67/4

* **University of Delhi, India August 2013- June 2017**

Bachelor of Technology in Computer Science Percentage: 86.1%

**WORK EXPERIENCE:**

**Software Engineer, Pro Consultancies, India June 2018-January2019**

* Built an interactive, responsive and reliable web application using **MERN stack** to track candidates for job opportunities.
* **Reduced CV screening time by 23%,** **recruitment cycle time by 15.6%** and facilitated collaborative hiring.

**Computer Vision Intern, Defense Research and Development Organization, India May 2016-July 2016**

* Designed an image processing application using **OpenCV, Python and Visual Studio** to perform histogram equalization, filtering techniques and thresholding using segmentation technique on grayscale images and videos.
* Implemented a vehicle detection pipeline based on **Histogram of Oriented Gradients (HOG)** features and **Linear Support Vector Machine Classifier** for UAVs (**98.7% accuracy**).

**Research Intern, Indian Institute of Management-Bangalore, India May 2015-June 2015**

* Used **Exploration vs. Exploitation** Theory and Algorithmic Game Theories of **Non Zero Sum Game**, **Nash Equilibrium** and **Non-Cooperative Game Theory** to evaluate the implementation feasibility of functional areas of Internet Governance (suggested by Laura De Nardis) as global policies.

**Web Development Intern, Oil and Natural Gas Corporation, India Dec 2014-Jan 2015**

* Designed an automated Vehicle Pass System using **ASP.NET** and **MySQL** to generate vehicle passes for employees and visitors, which **reduced management and search time by 25%** and **archiving costs by 10.8%.**
* Implemented modules for login, information recording, generating passes and advanced search feature for retrievals based on pass type, date, year, employee id, employee name and expiry date.

**Data Analytics Intern, Society of Pollution & Environmental Conservation Scientists, India May 2014-July 2014**

* Performed multivariate statistical analysis using **Principal Component Analysis**, **Factor Analysis** and **Cluster Analysis** on 18 water quality parameters in civic water supplies from 17 locations in Dehradun over a period of 5 years.
* Evaluation of spatio-temporal variations in toxicity parameters helped identify anthropogenic factors which **improved the water quality by 35%.**

**TECHNICAL SKILLS:**

**Languages:** Java, C++, Python, JavaScript, Basics of Go

**Web Technologies:** HTML, Bootstrap, React.js, React-Apollo, Redux, MERN Stack, Node.js, Express, GraphQL, Android Studio

**Cloud Technologies:** Amazon Web Services, IBM Cloud, Google cloud Platform

**Databases:** MySQL, PostgreSQL, Apache TinkerPop, NoSQL (MongoDB)

**Testing Frameworks and Version Control:** JUnit, JMeter, Mocha, Enzyme, GitHub

**UI/UX:** Adobe XD, InVision, Balsamiq, Heuristic Evaluation, User Interviews, Usability Testing, Rapid Prototyping, Wireframing, Stakeholder Mapping, Cognitive Pattern Study, Persona and Storyboarding

**Others:** OpenCV, AWS DeepRacer, Yelp API, Twitter API, Google API and PayPal API

**ACADEMIC PROJECTS:**

**Quora Simulation [MERN stack, Kafka, Redis Caching,Passport.js, D3.js Junit, JMeter, Mocha, AWS, MySQL]**

* Worked in a 6 member team and implemented the messaging, notification and analytics dashboard functionalities.
* Achieved **high throughput** and **low latency** using Apache Kafka and **optimized performance** using Redis Caching to r**espond to 10000 concurrent requests in 1s.**

**Starbucks Mobile App Simulation using Software Design Patterns [Java, Gradle, MERN Stack, AWS and Heroku]**

* Used object-oriented **design patterns** to implement pin authentication, adding and removing a card, placing orders, making payments and updating the card balance.
* Extended the project to a web-based application using **ReactJS,** **Node.js** and **MongoDB** and hosted it on **AWS EC2 with ELB.**

**Geospatial Data Handling [PostgreSQL, GCP, Google Earth]**

* Constructed spatial queries using **PostgreSQL** on **GCP** to compute convex hull and 3 nearest neighbors from a given location.
* Designed a Java program to generate spatial coordinates for the spirograph curve from the location and visualized the KML file, the query results and the spirograph curve using **Google Earth**.

**Artificially Intelligent Gaming Agent for Fruit Rage Game [Java]**

* Implemented solution for a zero sum two player game using **adversarial search technique of minimax algorithm with alpha-beta pruning**. Calibration with the specific machine is done to help the agent decide the look ahead cutoff depth.

**Swarm Intelligence Techniques and Genetic Algorithms for Test Case Prioritization [Java, Maven]**

* Implemented **Ant Colony Optimization**, **Bee Colony Optimization** and **Genetic Algorithms** and evaluated their performance based on the number of paths covered, number of iterations, number of test cases produced and time taken for generation of test suite.

**Usability Evaluation of ‘Wunderlist’ [Empirical and Heuristic Evaluations, AdobeXD]**

* Performed **empirical evaluation** by conducting in-person user testing, **heuristic evaluation** based on HCI theories and comparative study with Trello and Monday.com to evaluate pain points, core usability features and user experience goals.
* Designed the new prototype of the improved version using **AdobeXD**.

**First Order Logic Inference Engine [Java]**

* Created an inference engine to solve First Order Logic Resolution. Unification(variable-variable) and resolution techniques were used.

**Placing Baby Lizards in a Nursery [Java]**

* Implemented **Breadth-First Search**, **Depth-First Search** and **Simulated Annealing** to place ‘p’ baby lizards in a n\*n board with obstacles such that no two lizards can eat each other.

**‘NearBy’ Travel and Entertainment Application [HTML5, AngularJS, Node.js, Bootstrap, jQuery, Google, Yelp and Twitter APIs, Android Studio, AWS]**

* Developed a **responsive web application** to search place information and display Google and Yelp user reviews, images and Google Map directions. The place can be saved as favorites and be posted on Twitter.
* Deployed the application on **AWS Elastic Beanstalk** and developed an equivalent **Android app**.

**Prototype of Canvas [MERN stack, Kafka,Passport.js, Junit, JMeter, Mocha, AWS, MySQL]**

* Independently developed an end-to-end 3-tier distributed application emulating astudent learning management platform using MERN stack and deployed on AWS with replication and load balancing.
* Optimized the application using caching, connection pooling and Kafka messaging queue.

**CONFERENCE PUBLICATIONS:**

* **Computation of Bandwidth Utilization in a Network File System** (Proceedings of UGC and IEEE sponsored National Conference on Recent Trends in Instrumentation and Electronics, India, pp. no. 6-11, ISBN-13:978-18539305422)
* **Architecture for an Internet of Things Collision DetectionSystem** (Proceedings of UGC and IEEE sponsored National Conference on Recent Trends in Instrumentation and Electronics, India, pp. no. 38-42, ISBN-13:978-18539305422)
* **Future Architecture of General Purpose Computing on Graphics Processing Units** (Proceedings of UGC and DIETY sponsored National Conference on Advancements in Electronics and Computer Applications, India, p. no.108-111, ISBN:978-93-5254-496-7)

**CERTIFICATIONS:**

* Enterprise Design Thinking Practitioner **(Issued By IBM)** October 2019
* Enterprise Design Thinking Co-Creator **(Issued By IBM)** October 2019
* Enterprise Design Thinking Team Essentials For AI **(Issued By IBM)** October 2019
* AWS DeepRacer: Driven by Reinforcement Learning **(Issued by Amazon Web Services (AWS))** September 2019