Apoorva Bhatnagar

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TECHNICAL SKILLS

- Programming Languages : Java, C#, Python
- Web development : JavaScript, TypeScript, Node.js, HTML5, CSS, Angular, React, Brower plugins, Java Beans, Servlets
- Frameworks : Dot Net Core framework for C#, Java Enterprise Edition (Java EE), Django
- ML Technologies : Supervised (Naïve Bayes, Decision Trees, NLP, Neural Net, BERT), Unsupervised (K-means clustering)
- Design and architecture : Restful APIs, MVC web apps, Micro-services architecture, Single Responsibility principle, Clean Code

EDUCATION

Master of Science in Computer Science **GPA: 3.80/4.00** *Sept 2019 – Expected grad date May 2021*
University of Washington, USA

Bachelor of Science in Computer Science **GPA: 3.80/4.00** *Aug 2011 – May 2015*
Guru Gobind Singh Indraprastha University, India

ACADEMIC PROJECTS

GIF Caption Generator for improving web accessibility *Jan 2020 – Present*

- Auto generate a caption describing the contents of a GIF image with the goal of making it easier for screen readers to read out a GIF for those relying on accessibility tools to understand content on the web.
- The system uses a convolutional neural network (CNN) and a recurrent neural network (RNN) for encoding and decoding a GIF to generate descriptive text. The network is trained on Tumblr GIF image dataset.

Auto Documentor *Aug 2019 – Present*

- Developing an ML based solution for auto detecting question-answer pairs in a user's emails for the purpose of documentation. Once discovered, the result set is displayed to the user and if approved, the content will be added to a wiki.
- A multi layered ANN was used to classify sentences as questions. Model trained on SQUAD 2.0 and NPS chat dataset.
- The system then converts each sentence to a vector using Facebook's Infersent implementation and then uses cosine similarity and sentence structure semantics to identify candidate sentences as answers.

Smart Diary *Mar 2020 – July 2020*

- Created an app that serves as a daily journal. It included smart capabilities like emotion detection and media description.
- Developed a multi-tiered, multi-threaded backend application using Enterprise Java Beans and Glassfish server to support the storage and retrieval of content created by a user. The front end was written in Angular and provided capabilities to author content. The back end also included an Azure Cognitive Service based ML model to run sentiment analysis on the text to predict the user's emotional state for the authored content.

EXPERIENCE

Graduate Research Assistant – University of Washington
JIA Thermal Imagining Project *Oct 2019 – Present*

- Collaborating with distinguished Professor Dong Si on various Machine Learning projects which are part of DIAS Group.
- Lead ML researcher on the JIA thermal imaging project working along with Seattle Children's Hospital. Building ML models to predict arthritis in patients using thermal imaging technology.

Software Engineer/Freelancer – NetGen Technology
Weather Application *Jul 2018 – Jan 2019*

- Built a weather application using Google location API and Dark Sky API to find location information and provide localized weather updates. An observer-subscriber push notification pattern was used to distribute data from sensors to clients.

Software Engineer/Freelancer- Growthfountain.com
Stock Quotes Scrapping Algorithm, Trade Analyzer *May 2016 – Jul 2018*

- Developed a stock price quotation micro-service that fetched prices from a broker API. Used C# to implement the web API.
- Fed the prices to the project's trading engine via message bus. Later switched over to use Azure bus for the project.

Internship – India Meteorological Department
Throughput, Reliability and Availability Reporting of a highly-distributed network *May 2013 – Jul 2013*

- Created a runner process that executed every 20 minutes and performed a full network inspection by evaluating all the cluster nodes and network connected hubs for availability. The data was used to power globally accessible live reports.

Volunteer – Pratham Education Organization
Accessible Social Networks *Feb 2014 – Aug 2015*

- Analyzed and tested major social network sites such as Facebook and Twitter for accessibility with both automated tools like 508checker and the AATT (automated accessibility testing tool) which can crawl unauthenticated public web pages, and with visually impaired user groups from the NGO.

HONORS AND AWARDS

- Awarded Gold Key and elected to the membership of the Alpha Beta Kappa National Honor Society for outstanding academic accomplishment from Johnson & Wales University.