AAYUSH KUMAR

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EXPERIENCE

AIRBNB
Fullstack Software Engineer
SAN FRANCISCO, CA • JULY 2019 - PRESENT

Guest Store PDP Team: Optimized UX of Listing Product Detail Page (PDP) to increase bookings on Airbnb via feature-driven development, A/B Testing, & quality maintanence

- **Increased bookings by 1.3% globally** by surfacing dynamically updated cancellation info tailored to user-inputed dates & improved the ranking mechanism of such info to support nontrivial product specs
- **Refactored/redesigned various reusable PDP components,** such as a module for booking mechanisms & a cross-browser compatible carousel component, to be more performant, maintainable, & robust

E-TEXTILE HACKING
Core Software Engineer
JAN 2019 - MAY 2019

Repurposing, Expanding, and Exposing a Public API for the Levi's and Google Jacquard Collaboration

- **Developed iOS cocoapod toolkit** for developers to easily interface with Google Jacquard technology and customize user input behavior
- **Introduced new Jacquard gestures** that leverage the ability to discern variable applied pressure as a second dimension for user input
- **Published a paper as first author in ISWC'19** Proceedings of the 23rd International Symposium on Wearable Computers (https://dl.acm.org/doi/10.1145/3341163.3347721)

FACEBOOK MESSENGER
Software Engineering Intern
SEATTLE, WA • MAY 2018 - AUG 2018

Messenger Assistant Natural Language Generation Team

- **Deployed e2e Neural Natural Language Generation pipeline** into the assistant stack using context-aware decoder LSTMs
- **Developed data collection scripts** with heuristic-based automated annotations along with establishing guidelines & best practices for remote human-annotation teams

AMAZON ALEXA
Software Engineering Intern
CAMBRIDGE, MA • AUG 2018 - DEC 2018

Alexa Entity Resolution & Search/Accuracy Team

- **Automated management of entity resolution configs** using realtime accuracy & latency metrics to revert faulty changes
- **Leveraged DynamoDB & Distributed Job Scheduling** to store automated management settings per config & periodically monitor metrics for executing/suggesting rollbacks as needed

FRAMEHUNT
1st at HackGT 2017 (185 submissions)
ATLANTA, GA • OCT 2017 - DEC 2017

The Ctrl-F for Videos: A tool that helps users quickly search & skip to parts of a video based on visual content with Node.js

- **Integrated Clarifai API** & optimized video processing/search indexing pipelines for faster, more helpful searches
- **Built data flow, state management & oversaw design** of ReactJS WebApp backed by Amazon EC2 server & ExpressJS

YAHOO TRIPOD
Software Engineering Intern
SAN FRANCISCO, CA • MAY 2017 - AUG 2017

Tripod: Yahoo's platform for commoditized photo & video storage, serving, enrichment, aggregation, & search

- **Built Tripod Map/Image Viewer UI** with React.js & Mapbox Supercluster to visualize EXIF-metadata/geodata for user photos
- **Improved image search parsing accuracy** by implementing search metrics & analyzing query processing algorithm

PERSONAL PROJECTS

DEPENDENCY PARSING
Natural Language Jupyter Notebooks
MAR 2018 - APR 2018

Created a deep transition dependency parser in PyTorch with 93.6% (English) and 94.8% (Norwegian) dev accuracies

- **Built arc-standard transition-based dependency parser** using various methods of computing word embeddings
- **Implemented neural network components** for choosing actions & combining stack elements

RAVEN'S MATRIX SOLVER
Knowledge-Based AI Python Project
AUG 2017 - DEC 2017

Built an Agent to solve Raven's Progressive Matrices, visual analogies to assess IQ, with 83.7% train & 65.9% test accuracies

- **Built Semantic Networks** to capture knowledge representation using Numpy adjacency matrices & object oriented design
- **Leveraged Generate & Test** methodology to determine affine image transformations & recognize complex visual patterns

FACE DETECTION
Computer Vision Project
NOV 2017

Trained a classifier to detect faces using a sliding window classification, inspired by Dalal & Triggs 2005

- **Built HOG Descriptions** (Histogram of Oriented Gradients) of postive & negative examples in Caltech Web Faces dataset
- **Leveraged Hard Negative Mining** to boost classifier accuracy & augmented positive example data with horizontally mirrored faces

SCENE RECOGNITION
Computer Vision Project
OCT 2017 - DEC 2017

Explored Deep Learning & Bag of Words/SVM approaches to Scene Recognition task - accuracies measured with test set:

- **Designed Deep Neural Network** from scratch (54% accuracy) & fine-tuned the pre-trained VGG-F deep network (89% accuracy)
- **Trained 15 one-vs-all Linear SVMs** fed with Bag of SIFT features (66.1% accuracy) & k nearest neighbors (42.3% accuracy)

SKILLS

LANGUAGES
- Typescript/JavaScript
- Java
- Python
- Thrift
- Hack/PHP
- Matlab
- Ruby on Rails

LIBRARIES
- ReactJS
- GraphQL
- StorybookJS/Happo
- PyTorch
- Tensorflow
- SKLearn/OpenCV
- Redux/ImmutableJS
- Android SDK

DEV TOOLS
- Git/Github Integrations
- Mercurial
- Splunk
- Jira Issue Tracking
- Linux/RHEL (SSH)
- Designs/Mockups (Figma, Sketch)

EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY
BS Computer Science, 3.8 GPA
ATLANTA, GA • CLASS OF 2019

Relevant Coursework:

- Natural Language Processing
- Computer Vision
- Knowledge-Based AI
- Intro to AI
- Robotics & Perception
- Algorithm Design/Analysis
- Info Visualization
- User Interface Design

Made With ReactJS