AAYUSH KUMAR

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY
B.S. in Computer Science: Intelligence & HCI Threads - 3.83 GPA
ATLANTA, GA ● GRADUATING MAY 2019

EXPERIENCE

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

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

SMART CITY INFRASTRUCTURE ↗
Computer Vision Engineer
ATLANTA, GA ● AUG 2017 - DEC 2017

Working under Dr. James Tsai & Dr. Tony Yezzi to develop city infrastructure monitoring/diagnosis with modern technologies
- **Developing vehicle detection, categorization & tracking** system to gather data about traffic flow/behavior patterns
- **Using YOLO Real-time object system** backed by Tensorflow implementation of darknet & trained on Udacity's Autti dataset

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 and combining stack elements

FRAMEHUNT ↗
1st at HackGT 2017 (185 submissions)
OCT 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** and 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

SCENE RECOGNITION ↗
Computer Vision MATLAB 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)

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

SKILLS

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

LIBRARIES
- PyTorch
- Tensorflow
- SKLearn/OpenCV
- ReactJS/React Native
- Redux/ImmutableJS
- Android SDK

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

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

AWARDS

ACADEMIC
- **Faculty Honors** 4.0 GPA in Fall 2015 & Spring 2016
- **Dean's List** maintain a GPA average of 3.0 or above

SPEECH & DEBATE
- **2nd** Cal Berkeley National Invitational (117 entries)
- **1st** University of Pacific Jon Schamber Invitational
- **VP of Speech** Facilitated administrative tasks for Leland Speech & Debate Team of 300+ students

Made With ReactJS