Arnav Ghosh

📞 +1-607-3797-820 | ⌂ garnav | ✉ ag983@cornell.edu

EDUCATION

Cornell University, College of Engineering, Ithaca N.Y   **Expected May 2019**
Bachelor of Science, Computer Science

GPA: 3.79; **Dean's List:** Fall 2015, Spring 2016, Spring 2017, Fall 2017, Spring 2018

Coursework: Machine Learning ● Natural Language Processing ● Computer Vision ● Object-Oriented Programming ● Data Structures ● Operating Systems ● Functional Programming ● Databases ● Algorithms

Languages: Python ● Java ● C ● SQL ● JavaScript ● HTML ● CSS ● OCaml ● Unix
Technologies: Keras ● Tensorflow ● OpenCV ● Pandas ● Numpy ● scikit-learn ● Spacy ● Django ● Git ● Maven

SOFTWARE ENGINEERING EXPERIENCE

Undergraduate Research Engineer, *Cornell Database Group,* Cornell University   **Summer 2018**
- Conceptualized a voice querying system for databases, under the guidance of Prof. Immanuel Trummer
- Created systems that built query results by defining probability distributions over values in the database
- Implemented baseline models to transcribe speech, rank query results and built query clarification systems using Monte Carlo Search Trees and Apache Lucene in Java

Software Engineering Intern - NLP, *Arya.ai,* Mumbai   **Summer 2017**
- Developed a sentiment analysis tool using Logistic Regression and SVMs as part of the NLP Products Team
- Created frontend and backend services to allow companies to add datasets, run models and visualize results
- Implemented a platform extension to analyze and report misclassifications by all tools

Software Engineering Intern, *Inayo,* Mumbai   **Summer 2016**
- Worked on a Chatbot to connect customers and Inayo's medical partners, enabling questions about medical procedures, disease monitoring and insurance policies
- Created a Django application to automatically generate question-answer pairs from company manuals and FAQs
- Implemented a system to parse queries, pick follow-up questions and recommend other sources of information
- Trained the application to choose answers with 87% accuracy, using IBM Watson's APIs

ORGANIZATIONS - APPLICATION DEVELOPMENT & DATA SCIENCE

Data Scientist, *Cornell Data Science,* Cornell University   **Feb. 2018 – Present**
- Trained SVMs with scikit-learn and pandas to detect duplicate questions on forums with 80% accuracy
- Using Convolutional Neural Networks to detect and isolate the presence of pneumonia in chest radiographs

Software Developer, *Operations Research Group,* Cornell University   **March 2017 – Aug. 2018**
- Designed algorithms to help storage firms create truck routes that reduce fuel usage and travel time by 34%
- Developed a Java application to model and evaluate the cost, scalability and adaptiveness of different routing algorithms using Monte Carlo simulations

Back-End Developer, *Cornell Design & Technology Initiative,* Cornell University   **Oct. 2016 – Present**
- Working on a mobile application to allow Cornell students to view, filter and schedule over 5000 campus events
- Created a Django application to ease the process of authenticating users, uploading and editing event details
- Designed REST APIs to access event details, identify devices via token authentication and implemented paging

INDEPENDENT PROJECTS

Detecting Forged Images, *Computer Vision,* Cornell University   **Sept. 2018 – Dec. 2018**
- Proposed and evaluated methods to detect artificial regions in images using Convolutional Neural Networks

Natural Text Q&A Automation, *Natural Language Processing,* Cornell University   **Dec. 2017**
- Designed a system to answer questions from text by selecting candidate answers using parse-trees
- Achieved a 6-fold improvement over baselines using Word2Vec embeddings to create candidate content vectors

OCindle – eReader for OCaml, *Functional Programming,* Cornell University   **Nov. 2016**
- Created a customizable GUI to manage books; designed APIs to add, delete and search notes, highlights
- Developed unit tests, logging services and extensive technical documentation for easy extensibility

LEADERSHIP EXPERIENCE

Teaching Assistant, *Object-Oriented Programming & Data Structures*, Ithaca N.Y   **Aug. 2016 – Present**
- Hold office hours for 3 hrs/week and lead a weekly recitation of 35 students; Helped students understand the fundamentals of using data structures efficiently and programming effectively in Java