

Arjun R. Rao

✉ arjun.rao@colorado.edu | 🏠 arjun.fyi | 📧 arjun-rao | 📺 arjunra0 | 🐦 @arjunra0

Education

University of Colorado, Boulder

Boulder, US

M.S. IN COMPUTER SCIENCE

Aug. 2019 - Present

- Graduate Student Staff for Intro to AI (CSCI3202)

Ramaiah Institute of Technology (RIT)

Bangalore, India

B.E. IN INFORMATION SCIENCE AND ENGINEERING

Aug. 2014 - June 2018

- CGPA: 9.41/10
- Best Outgoing Student (Batch of 2014-2018), Dept. of Information Science & Engineering

Experience

Stride.ai Inc.

Bangalore, India

NLP ENGINEER

July 2018 - May 2019

- Worked on Stride's flagship product ACE that supports **Auto-ML** based document classification and information extraction. I built a **custom python library** that allows users to train, evaluate and perform inference on document classification tasks with limited labelled data. I also contributed to the **Django backend pipeline for model training, evaluation and inference**.
- Built Stride's **core frontend framework** with custom components and styles using Angular that was used in products like ACE, Know-Your-Customer (KYC), and other projects, serving as a frontend boilerplate for any web based product at Stride.
- Developed **interactive visualizations in D3.js** supporting real-time updates and user feedback.
- Worked on information extraction use-cases for **identifying key datapoints from documents** using NLP based models and custom heuristic rules.
- Built a **custom PDF Viewer using PDF.js** that allowed user annotation functions and additional capabilities like support for multiple monitors, side-by-side scrolling of multiple documents, cross-browser support, lazy-loading document pages, etc. The viewer is being used in 10+ Projects.
- Conducted over **40+ technical phone screens and 10+ in-person interviews** for SWE internship roles, as well as full-time positions for Frontend and NLP Engineers.
- Contributed to the **internal developer handbook** that lays out Stride's coding practices, policies, and style guidelines. I have also **authored several technical articles on Stride's internal Confluence**.
- Technologies Used: Python, Django, Keras, Tensorflow, D3.js, Angular, Typescript, PDF.js, Internal tools

RESEARCH AND DEVELOPMENT INTERN

Jan. 2018 - Apr. 2018, Oct. 2016 - Dec. 2016

- Worked on **optimizing Named Entity Recognition (NER) models** in a production project to improve performance by combining standard NER datasets with context specific data.
- Built **scrapers** for automatically extracting information from multiple websites involving **simulation of complex UI interactions**.
- Technologies Used: Python, Tensorflow, Keras, Gensim, Selenium

Cloud Developer Relations, Google Inc.

San Francisco, US

DEVELOPER PROGRAMS ENGINEER INTERN

June 2017 - Aug. 2017

- Built tools to help **track code repositories** and generate **consolidated notifications** for events like issues, comments, etc., for faster triage of issues.
- Part of the project was **released as open source software**, and can be found at github.com/GoogleCloudPlatform/issue tracker
- Technologies Used: Google Cloud Datastore, Google BigQuery, Google App Engine, GoLang, Angular

Ramaiah Institute of Technology

Bangalore, India

TEACHING ASSISTANT, APPLIED CS WITH ANDROID COURSE (4 CREDITS)

Jan. 2017 - May 2017

- Teaching Assistant for **Applied CS with Android Course** designed in collaboration with Google.
- Handled **25 two-hour tutorial sessions** for a class of **52 students**.
- Developed **codelabs, internal sites, auto grading systems** for assignments.
- Based on my work, RIT was selected as **one of the 5 universities worldwide, to be featured in a case study** for University Adoption of the program. [Link]
- Technologies Used: Android, Java, GoLang, Javascript

CSIR- Central Electronics Engineering Research Institute

Pilani, Rajasthan, India

RESEARCH FELLOW, INDIAN ACADEMY OF SCIENCES SUMMER RESEARCH FELLOWSHIP (IAS-SRFP 2016)

June 2016 - July 2016

- Research project titled "Catadioptric Scene Analysis" at the Computer Vision Lab, CSIR-CEERI under Prof. Santanu Chaudhury.
- Worked on **implementation of unwrapping algorithms and evaluation of computer vision algorithms for pedestrian detection** on catadioptric images. [Link to Report]
- Technologies Used: Matlab - Computer Vision Toolbox, OpenCV

Publications

PAPERS

Milo: A visual programming environment for Data Science Education

Lisbon, Portugal

ARJUN R RAO, AYUSH BIHANI, MYDHILI K NAIR

Oct. 2018

- Proceedings of 2018 IEEE Symposium on Visual Languages and Human-Centric Computing (**VL/HCC'18**), pp. 211-215. [PDF]
- Designed and implemented a novel **visual programming environment** to help novice students and non-programmers learn **Data Science and ML concepts** using block based programming.
- DOI: 10.1109/VLHCC.2018.8506504

Context Based Approach for Second Language Acquisition

New Orleans, USA

NIHAL V NAYAK, ARJUN R RAO

June 2018

- System paper for Duolingo's shared task on Second Language Acquisition Modelling (**SLAM 2018**). [PDF]
- Published in the Proceedings of the **NAACL-HLT Workshop** on Innovative Use of NLP for Building Educational Applications (**BEA at NAACL 2018**).
- Trained a logistic regression model to predict the likelihood of a student making a mistake while answering an exercise on Duolingo. Made use of features inspired by research in **code-mixed language learning** where context plays an important role.
- Result: **AUROC scores for English/Spanish = 0.821**, Spanish/English = 0.790 and French/English = 0.812. **2nd best linear model**, finished 9th overall in SLAM 2018

BOOK CHAPTERS

DearDiary - An IBM Watson Powered Mental Healthcare Tracker

Springer, Singapore

ABHILASH K, AMISHA A, ANISHA M., ARJUN R RAO

Nov. 2017

- Book Chapter in Applications of Cognitive Computing Systems and IBM Watson, published by Springer, Singapore.
- DOI: 10.1007/978-981-10-6418-0_8

Big Data Predictive Modeling and Analytics

Bangalore, India

MYDHILI K NAIR, ARJUN R RAO, MIPS A PATEL

Oct. 2017

- Book chapter in Big Data Analytics: Tools and Technology for Effective Planning. (ISBN 9781138032392)
- Published by CRC Press Taylor & Francis Group.

Data Migration Techniques from SQL to NoSQL

Bangalore, India

MYDHILI K NAIR, NIHAL V NAYAK, ARJUN R RAO

Mar. 2017

- Book chapter in NoSQL: Database for Storage and Retrieval of Data in Cloud. (ISBN 9781498784368)
- Published by CRC Press Taylor & Francis Group.

Honors & Awards

NATIONAL

Winning Team, Hackathon Challenge, IBM Collaborative Academia Research Exchange (ICARE 2016)

Oct. 2016

Fellow, Indian Academy of Sciences Summer Research Fellowship Program 2016

June 2016

Finalist, Build the Shield 2016 - Cyber security contest by Microsoft

Mar. 2015

REGIONAL

Best Performer, PAYSE Ethical Hacking Challenge at RIT Bangalore, by Nucleus Software

Mar. 2017

Winner, Hackathon, Empyreal 2017 at RIT Bangalore

Feb. 2017

Workshops & Talks

Cloud Study Jam

Bangalore India

FACILITATOR, GOOGLE DEVELOPER GROUPS BANGALORE

Feb. 2019

- Conducted a day long hands-on workshop on ML and Google Cloud.
- Topics covered: Intro to Kubernetes, Cloud ML APIs, Cloud ML Engine.
- Used the QwikLabs platform to conduct hands-on sessions
- [\[Link to Slides\]](#)

Learning AI Development and UX

Bangalore India

SPEAKER FOR WOMEN TECH MAKERS BANGALORE'S SESSION ON LEARNING AI DEVELOPMENT

Dec. 2018

- Conducted a day long hands-on workshop on AI development.
- Topics covered: Text classification, Word Embeddings, Feature Engineering, Serving ML Models in Production.
- Used Google's Colab environment to design hands on exercises using Keras and Scikit-Learn.
- [\[Link to Slides\]](#)

Apps Script Study Jam

Bangalore, India

FACILITATOR FOR GDG BANGALORE'S WORKSHOP ON GOOGLE APPS SCRIPT

Feb. 2018

- Conducted a day long hands-on workshop on Google Apps Script for Google Developer Groups Bangalore (GDG Bangalore).
- Topics: Google Apps Script, Automating workflows with Apps Script, Google Clasp, Integrating third-party services with Apps Script.
- [\[Link to Slides\]](#)

The Power of Google Apps Script

Bangalore, India

SPEAKER FOR GDG BANGALORE'S DEVFEST

Oct. 2017

- Introduced Google Apps Script with use cases, workflows and demos at Google Developer Groups Bangalore's annual developer conference.
- [\[Link to Slides\]](#)

Extracurricular Activities

Two Day Hands on Workshop on UML Modelling and Design Patterns

Bangalore, India

TEACHING ASSISTANT

Mar. 2017

- Conducted hands-on sessions on MVC using Flask at Global Academy of Technology, Bangalore.
- Wrote problem sets, walkthroughs, slides & lecture notes for the hands on sessions.
- Setup a cloud based IDE for students to use on c9.io to reduce setup time.

Google India's Code to Learn Contest 2016

Bangalore, India

JUDGE

May 2016

- Evaluated projects submitted by students of classes 5 to 10, created using Scratch and MIT App Inventor.

IEEE ANTS Conference 2016

Bangalore, India

CONFERENCE VOLUNTEER AND APP DEVELOPER

Nov. 2016

- Developed an Android & Web App to handle conference logistics using QR Codes on attendee badges.
- Helped organize the conference as a student volunteer at the Indian Institute of Science, Bangalore.

IEEE WIE Symposium 2016, Ignite Tech Fest 2016, TEDx MSRIT 2015

Bangalore, India

EVENT VOLUNTEER

2015-2016

- Organized, and conducted a Capture the Flag competition as part of Ignite Tech Fest 2016 at RIT.
- Helped organize events as a volunteer for TEDx MSRIT 2015 & IEEE WIE Symposium 2016 at RIT.