

# Arjun R. Rao

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## Education

### University of Colorado, Boulder

M.S. IN COMPUTER SCIENCE

Boulder, US

Aug. 2019 - Present

### Ramaiah Institute of Technology (RIT)

B.E. IN INFORMATION SCIENCE AND ENGINEERING

Bangalore, India

Aug. 2014 - June 2018

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

## Experience

### Stride.ai Inc.

NLP ENGINEER

Bangalore, India

July 2018 - May 2019

- Worked on text classification and hierarchical clustering problems, optimized for low resource datasets.
- Lead frontend developer, responsible for UI design and implementation on several projects.
- Developed interactive visualizations in D3.js supporting real-time visualization updates, user feedback etc.
- Lead developer for a custom PDF Viewer built using PDF.js that allows for user annotation functions and additional capabilities. The viewer is being used in 10+ Projects.
- Technologies Used: Python, Keras, Tensorflow, D3.js, Angular, PDF.js, Internal tools

### RESEARCH AND DEVELOPMENT INTERN

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

- Optimized Named Entity Recognition models in a production project to improve accuracy by combining standard NER datasets with context specific data.
- Implemented end to end web based projects for process automation using Django, Angular and internal libraries.
- Built scrapers for automatically extracting information from multiple websites involving simulation of complex UI interactions.
- Technologies Used: Django, Selenium, Angular, CoreNLP, Internal tools

### Cloud Developer Relations, Google Inc.

DEVELOPER PROGRAMS ENGINEER INTERN

San Francisco, US

June 2017 - Aug. 2017

- Built tools to help track code repositories and generate customized notifications, for faster triage of issues.
- Part of the project was released as open source software, and can be found at [github.com/GoogleCloudPlatform/issuetracker](https://github.com/GoogleCloudPlatform/issuetracker)
- Technologies Used: Google Cloud Datastore, Google BigQuery, Google App Engine, GoLang, Angular

### Ramaiah Institute of Technology

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

Bangalore, India

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

### FACILITATOR, GOOGLE APPLIED CS WITH ANDROID PROGRAM

Feb. 2016 - Dec. 2016

- Conducted 5 cohorts of 16 hour Applied CS workshops for over 150 students as a campus facilitator for RIT.
- Recognized as a top facilitator for the academic year of 2016-2017 in the program.
- Technologies Used: Android, Java

### CSIR- Central Electronics Engineering Research Institute

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

Pilani, Rajasthan, India

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

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## 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. 2<sup>nd</sup> best linear model, finished 9<sup>th</sup> 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 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

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## 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, Emprereal 2017 at RIT Bangalore

Feb. 2017

## Workshops & Talks

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### 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

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### 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.