

# Kiran Ramnath

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## EDUCATION

### University of Illinois, Urbana-Champaign

*Master of Science in Electrical and Computer Engineering, GPA: 4.0/4.0*

Champaign, IL

Aug. 2019 – May 2021

### Birla Institute of Technology and Science, Pilani

*Bachelor of Engineering in Electrical and Electronics Engineering, GPA 8.55/10*

Pilani, India

Aug. 2012 – Jun. 2016

## COURSES (\* DENOTES A+)

**UIUC:** Pattern Recognition, Artificial Intelligence\*, Random Processes\*, Distributed Systems\*, Computational Inference and Learning, Learning-based Robotics, Statistical Inference for Data Scientists and Engineers, Introduction to Optimization

**Coursera:** Design and Analysis of Algorithms - 1 and 2, Machine Learning, Deep Learning Specialization

## RESEARCH EXPERIENCE

**Advisor:** Prof. Mark Hasegawa-Johnson, Statistical Speech Technology (SST) Group, UIUC

**Research Interests:** Natural Language Processing, Computer Vision, Speech Processing, Knowledge Graphs

- **Worldly Wise! Cross-lingual knowledge fusion for Fact-based Spoken Visual Question Answering**  
*Kiran Ramnath, Leda Sari, Mark Hasegawa-Johnson, and Chang D. Yoo. NAACL-HLT, 2021*
- **Seeing is Knowing! Fact-based Visual Question Answering using Knowledge Graph Embedding**  
*Kiran Ramnath and Mark Hasegawa-Johnson. arxiv.org/abs/2012.15484*
- **Fair Speech Recognition through Conditional Adversarial Learning**  
*Dias Issa, John Harvill, Rusty Mina, Sunghun Kang, **Kiran Ramnath**, Leda Sari, Mark Hasegawa-Johnson, and Chang D. Yoo* Submitted to IEEE Transactions on Audio, Speech, and Language Processing
- **Grasping the Airwaves with a Robotic Wireless Access Point**  
*Emerson Sie, **Kiran Ramnath**, and Kuan-Ying Lee. December, 2020*
- **Performance Improvement of Operational Amplifiers in Subthreshold Region using Forward Body Bias**  
*Deepansh Dubey<sup>1</sup>, **Kiran Ramnath**<sup>1</sup>, Anu Gupta. 12th IEEE INDICON (India Conference), 2015*

## RESEARCH TALKS

- **Visual Question Answering: An Overview** Future of Privacy Forum AI Working Group  
*Kiran Ramnath, and Mark Hasegawa-Johnson. 11 Jan, 2021*
- **Data Science embedded Management Consulting** SP Jain Institute of Management and Research, India  
*Kiran Ramnath, Vidhi Tembhurnikar, and Pradnesh Deshmukh. June 2019*

## WORK EXPERIENCE

### Member of Technical Staff - Data Scientist

*Salesforce*

July 2021 – Present

*California*

- **Customer support slack-bot:** Working with Hyperforce Development Platform Support team that provides customer support to developers on CI/CD as Salesforce migrates to Public Cloud. Currently working on NLP use-cases such as search improvement, text-categorization and workflow-automation to help reduce support burden by returning relevant technical documentation on Confluence to customers. Also working on data engineering and data visualization to suggest process improvements.

### Infrastructure Data Scientist Intern

*Salesforce*

May 2020 – Aug. 2020

*Urbana, IL*

- **Long-term infrastructure demand forecasting.** Worked with Capacity Planning team to predict Salesforce's global server requirements in 3-5 years. Performed demand segmentation and built 30+ forecasting models using FB Prophet. Automated periodic analysis by dockerizing data pipelines.

<sup>1</sup>denotes equal contribution

## Graduate Teaching Assistant

Aug. 2019 – Present

*University of Illinois, Urbana-Champaign*

*Champaign, IL*

- **Artificial Intelligence (CS 440 / ECE 448)** - A senior / graduate level course on AI introducing **350+** students to ML, CV, NLP, etc. Held tutorial sessions and office hours, designed coding assignments, autograders, exam problems.
- **Introduction to Electronics (ECE 110)**: Taught students in lab sections how to apply basics of electronics through building an autonomous wall-following / light-following car.

## Data Science Consultant (Contract)

Jul. 2019

*Dalberg Advisors*

*Mumbai, India*

- **Detering online sex trafficking of children in India.** Worked with Dalberg Advisors and GFEMS (Global Fund to End Modern Slavery) to devise their online sex-trafficking deterrence strategy by scraping 80,000 ads from several websites and identifying top locations, suppliers, etc. using NLP

## Artificial Intelligence Engineer Intern (Fellowship)

Jan. 2019 – Mar. 2019

*Digital Product School, UnternehmerTUM*

*TU Munich, Germany*

- **Road toll pricing agent based simulation.** Applied user-centred agile product development to ideate and design a Cap-n-Trade toll system to ease city traffic. Worked with BMW & Nokia to build an agent-based simulation model that projected 6% traffic reduction in Berlin

## Experienced Associate

Jun. 2016 – Jun. 2019

*PricewaterhouseCoopers US Analytics Advisory*

*Mumbai, India*

- **Image captioning.** Implemented an image captioning model for retail products using encoder-decoder architecture, achieving BLEU score of 57
- **Promotion campaign effectiveness.** Identified effectiveness of promotion campaigns for a pharma company, helping it shut down 50M\$ non-performing programs. Leveraged linear regression and Bayesian networks in R
- **Complaints management using text analytics.** Revamped consumer complaints categorization against financial institutions into actionable groups using topic modelling, full-text search engines, sentiment analysis, etc.
- **Frequent itemset mining.** Using Bayesian networks and graph mining in R, designed a novel frequent itemset mining technique based on customer transaction data for a technology specialty distributor, lifting sales by 6%
- **Collection efforts optimization using decision trees.** Built a decision tree model using SAS to help a mortgage client deprioritize accounts & optimize collection efforts by 12% points
- **Resumé shortlisting automation.** Built a resume shortlisting model in Python using random forest text classifier to enable internal robotic process automation. Reduced man-hours spent by 50%
- **Event detection using Named Entity Recognition.** Identified potential healthcare market monopolization through company mergers. Led a team of interns to use named entity recognition on scraped articles to create a PoC by partnering with SMEs

## Software Engineer Intern

Jan. 2016 – Jun. 2016

*CISCO*

*Bangalore, India*

- **Full-stack web development.** Designed, implemented, and operated an MVC web portal for ramping up 100 new hires with computer networking basics. Used Python's Django framework with unit testing and CI/CD

## TECHNICAL SKILLS

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**Proficient:** Python, R, PyTorch, Git, Google Cloud Platform, MS Office

**Competent:** Keras, Shell, AWS, Jenkins, SQL, Apache Hive, Tableau, Tableau CRM, HTML/CSS, Selenium

**Familiar:** Tensorflow, Java, C, Docker, Kubernetes, Spinnaker, PyRobot, SAS, AnyLogic