

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

Thesis: Fact-based Visual Question Answering using Knowledge Graph Embeddings

- **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 Dubey¹, Kiran Ramnath¹, Anu Gupta. 12th IEEE INDICON (India Conference), 2015

INVITED 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.

¹denotes 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

- **Deterring 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 text-analytics

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

- **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%
- **Image captioning.** Implemented a deep learning model for retail products using encoder-decoder architecture, achieving BLEU score of 57
- **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
- **Movie-recommendation POC:** Led a team of new hires for their project simulation exercise to develop a movie-recommendation system using topic-modelling and sentiment-analysis on scraped Rotten Tomatoes reviews

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

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