

Vishal Anand

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INTERESTS

Natural Language Processing, Conversational AI, Multi-modal learning, Low Resource Learning

EDUCATION

- **Columbia University**, MS, Computer Science, 3.84/4 2017 - 2019
 - NLP Lab: Low Resource learning. Conversational AI / Summary. Machine Reading
 - CA Fellow Tuition Waiver, Student Body Career Chair, PDL Fellow, Class Marshal
- **Stanford University**, Continual Learning Program, Big Data Applications 2016
- **IIT Guwahati**, BTech, Computer Science, 8.1/10 2011 - 2015
 - Thesis: Multi-task NLP: word-vector generation, causality evaluation

INVITED TALKS

- 'On skipping dense nets: Explainability in DeepNets', AI4Retail Conference, New York, 2019
- 'Context sensitive NLP models in business decisions', eBay, New York, 2018

EMPLOYMENT

- **Microsoft**, Applied Scientist / Engineer, March 2019 - Current
 - Smart-reply in conversational AI, Microsoft Research MSR - JEM program
 - Collaboration with Microsoft Research on Machine Reading Comprehension
 - Earlier work on 9x speed-up with loadbalancing in Azure Namespace
 - Published three papers with external collaboration
- **NLP Lab, Columbia University**, Research Assistant, 2017 - 2019
 - Multi-lingual low resource transfer learning: Swahili-Tagalog-Somali, German
 - Conversational Summarization with primary text and secondary sound guidance
- **Uber**, Machine Learning Intern, Summer 2018
 - Publicly featured first of 11 selected among 200 interns in Uber's blog [link]
 - 8% CTR improved, Deep-Wide Tensorflow Models to debias under-sampled elasticities
- **Visa**, Senior Software Engineer, 2015 - 2017
 - Anomaly detection in transactions, 2 patents and 1 trade secret filed
 - CFO Vasant Prabhu directly recognized my work; fast-tracked promotion
 - Created a new product line from scratch via hobby-project, currently in production
- **Google Summer of Code**, Fellow, Summer 2015
 - Architected and developed open-source Kriging Interpolation libraries, Eclipse, [code]
- **Goldman Sachs London**, Equity Quantitative Strategist, Summer 2014
 - 40 million USD each order: Hedged risks for Exchange Traded Funds' Algorithmic trading
- **University of Manchester**, Research Assistant, Summer 2013
 - Improved 30% efficiency with Queen's Swarm Optimization variant in ML models

PUBLICATIONS & PATENTS

- Kayi E *, **Anand V***, Muresan S. MultiSeg: Parallel Data and Subword Information for Learning Bilingual Embeddings in Low Resource Scenarios [paper] [code] [visualization]
In Proceedings of *Language Resources and Evaluation Conference*, Marseille, France
Full paper: SLTU-CCURL at LREC, 2020
- **Anand V**, Ramesh R, Wang Z, Feng Y, Feng J, Lyu W, Zhu T, Yuan S, and Lin C. Story Semantic Relationships from Multimodal Cognitions.
In Proceedings of the 28th ACM Multimedia Conference, Seattle, USA, 2020.

- Ramesh R, **Anand V**, Wang Z, Zhu T, Lyu W, Yuan S, and Lin C. Kinetics and Scene features for intent detection. International Workshop on Deep Video Understanding (DVU2020) (Co-Located with ACM ICMI 2020, Utrecht, The Netherlands, 2020). **Oral Presentation.**
- **Anand V** In process, two patents: Text process optimization; NLP and Quantum learning, 2021
- **Anand V** Security (NLP) approaches for virtual reality, Visa Inc., US Patent. 15/184,759, 2019
- **Anand V** Systems & methods for preventing fraud, Visa Inc., US Patent. 15/674,187, 2017
- **Anand V** NLP based pre-event occurrence prediction, Trade Secret, Visa Inc., 2016
- Multiple authors (top researcher). On Optimizing Human-Machine Task Assignments, In proceedings of 3rd AAAI Conference on Human Computation and Crowdsourcing, San Diego, USA, Nov 2015.

SKILLS

- *Code:* C++, Python, Java, Scala, C; *Frameworks:* PyTorch, Tensorflow, Spring, Docker
- *Languages:* English (fluent), Hindi (native), Odiya (fair), Mandarin (basic)

SELECTED HONORS

- Class Marshal in graduating Columbia class for demonstrating academic achievements, 2019
- CA Fellowship, Columbia: full-tuition waiver for exceptional performance, 2018
- Featured in Uber's blog [link], 11 out of 200 interns, 2018
- Silver Innovation Award: Pioneering with a purpose - session with CFO, Visa, 2016
- Asia Ranked 79, ACM ICPC Asia, Regionals Onsite, 2014
- All India Ranked 104, National Cyber Olympiad, 2011

MORE PROJECTS

- Variational autoencoder on sparse data for music playlist recommendation, Advanced Machine Learning with Professor Tony Jebara (Netflix / Spotify), Spring 2018
- Multi-Task NLP framework for deep learning and causality evaluation, Thesis, IIT Guwahati, Dr. Ashish Anand, 2014-2015
- Sudoku Difficulty Performance Modelling with multiple regressions, Naive Bayes and Trees, IIT Guwahati, Spring 2015

MENTORING

- Head TA: Advanced Big Data Analytics, Columbia University, Fall 2018, Spring 2018, Fall 2017
 - Worked with Professor Ching-Yung Lin to design research projects.
 - TA award with full tuition waiver. Managed 6 TAs and 180 graduate students.
 - Bi-weekly one-on-one team mentoring on their research.
- Co-Lead TA: CS101, CS110, Introduction to Computing, IIT Guwahati, Fall 2014
 - Program to help under-performing students; undergrads usually not allowed to tutor

LINKS

- Website: <https://vishalanand.net>
- Github: <https://github.com/vishalanand>
- LinkedIn: <https://www.linkedin.com/in/anandvishal94>

REFERENCES

- Professor Smaranda Muresan, Research Scientist, Columbia University
- Professor Ching-Yung Lin, IEEE Fellow, Columbia University
- Professor Ashish Anand, IIT Guwahati