

# Vinith Misra

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*ML, NLP, optimization. Proving, coding, and fiddling with hyperparameters.*

## Industrial Work History

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**Senior Data Scientist, Netflix (July 2016 – Present):** Modeling, optimization, and everything in between.

**Research Staff Member, IBM Watson (Sep 2014 – June 2016):** Knowledge graphs, dialog, and personality analytics. Graph embeddings, link prediction, text classification/generation. Crowdsourcing.

**Data science intern, Drawbridge Inc. (Feb–Sep 2014):** Machine learning algorithms at scale for real-time bidding.

**Technical consultant, HBO's "Silicon Valley" (Sep 2013 – Present):** Technical content, fictional algorithm design, and general technical input. GQ's "Math of the Year" 2014.

**Research intern, IBM Research (Aug–Sep 2013):** Theoretical work, experimentation, and practical implementation involving knowledge graphs and timeseries data.

**Assorted internships and consulting, LTI, ADI, Samplify Systems, et al (June 2006–April 2013):** Signal processing algorithms for cameras, medical ultrasound, and mixed signal circuits.

## Education

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### Stanford University

Ph.D., GPA – 3.98, Quads rank – 9/174

Thesis "Universal Communication and Clustering." Advisor: Prof. Tsachy Weissman.

### Department of Electrical Engineering

2008–2014

### MIT

S.B. + M.Eng., GPA – 5.0/5.0

Thesis "Functional Quantization." Advisor: Prof. Vivek Goyal. David Adler Memorial Thesis Prize.

### Department of Electrical Engineering and Computer Science

2004–2008

## Some (discussable) work

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**"Data science" at Netflix:** Text modeling, text/audio/video classification, probabilistic programs, optimization under uncertainty, and assorted predictive models. React/Flask/Shiny apps to interactively surface models to stakeholders.

**Neural graph embeddings:** Probabilistic models and associated approximations for learning binary-valued features for nodes in a graph. Dramatically accelerates retrieval and ranking in ancient computers. *Presented at AAAI 2018.*

**Language modeling:** Sentence similarity and paraphrase generation, for both specific and broad domains. Anything from tfidf to variational autoencoders — whatever works. *Watson.*

**Computational personality:** Fiction analytics (ASOIAF/Game of Thrones, Harry Potter, Star Wars, LOTR) and personality-driven text generation. *TED@IBM 2015, and broad press coverage.*

**Clustering and Universal Communication:** Information theoretic models for unsupervised learning. Applied to web data, population genetic data (w/ Dr. Suyash Shringarpure), and shotgun sequencing. *ISIT 2013.*

## Academic Service and Dramatic Interests

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**2015–:** Founded the **Stanford Compression Forum** with assistance of Stanford, IBM, and HBO. Leaders from industry and academia brought together to determine the future of data compression. Second annual meeting in Feb 2016. 📄 [compression.stanford.edu](http://compression.stanford.edu)

**2008–2013:** TA for information theory and signal processing courses at Stanford and MIT.

**2008–:** Drama and theater. TA in acting for Stanford Arts Intensive, Stanford Continuing Studies, Stanford Drama, and the American Conservatory Theatre. Performances with MIT Dramashop, the Boston Theater Marathon, Stanford Drama, and Naatak.

**2009–:** Filmmaking, and all aspects thereof. Short film "Faceoff" premiered at the 2012 Palo Alto International Film Festival.

## Distinctions (of varying legitimacy)

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**2016:** LinkedIn "Next Wave": Entertainment.

**2015:** Forbes 30 under 30: Enterprise Technology.

**2008–2013:** NDSEG and Stanford Graduate Fellowships.

**2008:** MIT David Adler Memorial Thesis Prize

**2015:** TED@IBM speaker: "The Algorithms of Humor."

**2014:** *Optimal Tip-to-tip Efficiency:* GQ "Math of the Year", placement on various critics' top-television-moments-of-the-year.

**2014:** *Screenplay/novel personality analytics:* Reddit frontpage (r/dataisbeautiful), 1M+ views on TechInsider et al.