NAM TRANG
Visiting Assistant Professor

Department of Mathematics
University of California, Irvine
Irvine, CA, 92697-3875

(949) 331-3395
ntrang@uci.edu
http://math.uci.edu/∼ntrang

Education

- **Doctor of Philosophy**, Mathematics, UC Berkeley, 3.98 GPA.
- **Bachelor of Arts**, Mathematics, UC Irvine, 3.91 GPA.
- **Bachor of Science**, Information and Computer Science, UC Irvine, 3.91 GPA.

Desired Occupations

- Data Scientist/Engineer, AI related research/software engineer.
- Research Scientist/Mathematician.
- Mathematics Professor.

Career Summary and Skills

- 10 years of experience/expertise in teaching/advising/mentoring and research in mathematics.
- Proficient in math finance, probability/statistics.
- 4+ years of experience in programming (C++/Java/Python) and machine learning/data science.
- **Core skills:** Problem solving, research, mathematics, programming, teaching/mentoring.
- **Mathematics**: research in mathematical logic, set theory, computability theory, model theory, probability/statistics and math finance.
- **Computer science**: data structures/algorithm design and analysis, machine learning and data science. **Proficient in**: Latex, Mathlab, C++, Java (sample codes: see the Virtual Math Museum http://3d-xplormath.org), Python (including matplotlib, numpy, sklearn, theano), and TensorFlow.

Work History

- July 2015 – present: **Visiting Assistant Professor of Mathematics**, University of California, Irvine; Irvine, CA, USA
- August 2013 – June 2015: **Postdoctoral Scholar**, Carnegie Mellon University; Pittsburgh, PA, USA
- August 2007 – June 2011: **Graduate Student Instructor**, UC Berkeley, Berkeley, CA, USA
- 2006-2007: **Contributor to the UC Irvine Virtual Math Museum**: write Java code for 3D-XplorMath-J (see http://3d-xplormath.org/).

Current Projects

- (Machine Learning) Training various classifiers to achieve a high classification accuracy on the SMS Spam Collection Dataset (on Kaggle). Implementing neural net architectures on TensorFlow.
- (Math Finance/Statistics) (with Prof. Matt Foreman, UC Irvine) Analyzing stock data (e.g. time series of stocks in the S&P 500) with the goal to validate (or invalidate) various asset pricing theories (e.g. CAPM, APT), and devising novel techniques for predicting stock prices using relatively short time series of stock data (e.g. stock prices of the previous 6 months).
- (Mathematical Logic) (with Prof. John Steel, UC Berkeley) Completing the paper "Square in Least Branch Hod Mice", which characterizes $\square$ in a least branch hod

mouse.
- (Mathematical Logic) (with Prof. Daisuke Ikegami, Tokyo Denki University) Making significant progress on the project of classifying what forcings preserve determinacy.

Awards and grants

- The Howard Tucker Award, Outstanding Senior in Mathematics, UC Irvine, 2007.
- NSF Grant DMS-1565808, 2016–2019 (PI on the NSF research award for project titled: "Descriptive Inner Model Theory, Large Cardinals, and Combinatorics").

Synergetic, Educational, and Leadership Activities

- 2014: Served on Chris Lambie-Hanson's PhD thesis committee at CMU.
- 2016: Co-advised and served on Daniel Rodriguez's PhD thesis committee at CMU.
- Co-organizer of the 2016 Conference on Descriptive Inner Model Theory and Hod Mice, UC Irvine, 18–29 July, 2016.
- 2016: Participate (as both Assistant and Leader) to the UCI Math Circle.
- Participating in the UCI Center for Engaged Instruction's pedagogical programs with the goal of earning a Certificate in Teaching Excellence in Spring 2018.
- NSF Panelist.
- Reviewer for the AMS Mathematical Reviews.
- 2017: Supervising Math 199: an undergraduate independent reading course on topology and set theory.

Selected Publications

1) Trang, N., Determinacy in $L(\mathbb{R}, \mu)$, Journal of Mathematical Logic, 14(01), 2014, 23 pages

2) Sargsyan, G. and Trang, N., Non-tame mice from tame failures of the unique branch hypothesis, Canadian Journal of Mathematics, 66(4), 2014, 903-923

3) Trang, N., PFA and guessing models, Israel Journal of Mathematics, 215 (2016), 607–667, http://dx.doi.org/10.1007/s11856-016-1390-x.

4) Sargsyan, G. and Trang, N., Tame failures of the unique branch hypothesis and models of $\mathsf{AD}_{\mathbb{R}} + \Theta$ is regular, Journal of Mathematical Logic, 16(02), 2016, 31 pages, 10.1142/S0219061316500070, .

5) Rodríguez, D. and Trang, N., $L(\mathbb{R}, \mu)$ is unique, 2015, to appear on the Advances in Mathematics.

Selected Invited Talks and Conferences

- Forcings and Models of Determinacy, *The Joint Math Meeting, Logic Special Session*, Jan 2018, San Diego.
- *Open Data Science Conference (ODSC)*, San Francisco, Nov 2017.
- The Core Model Induction, *4th Muenster Conference on Descriptive Inner Model Theory*, July 2017, Muenster, Germany,
- Compactness of ω_1, *UCLA Logic Colloquium*, Jan 2017.
- Large cardinals, determinacy, and forcing axioms, *The Logic Colloquium*, Aug 2016, Leeds, UK.
- Hybrid Mice, Scales, and the Core Model Induction, *Rutgers Logic Conference*, Oct 2014, Rutgers University.
- On a Class of Guessing Models, *BEST*, June 2014, UC Riverside.
- The Core Model Induction and Guessing Models, *AIM and UC Berkeley workshops on DIMT*, June 2014, Palo Alto and Berkeley.
- On a Class of Guessing Models, *Young Set Theory Conference*, May 2014, Poland.