John Calabrese

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Education

- **University of Oxford** — Oxford, UK
  PhD in Pure Mathematics. — *2013*
- **Università di Pisa** — Pisa, Italy
  Laurea Specialistica in Mathematics, cum laude. — *2009*
  Laurea Triennale in Mathematics, cum laude. — *2008*

Skills

- Languages: Python, English, Italian.
- Packages: PyTorch, pandas, NumPy, spaCy, scikit-learn, JupyterLab, Tweepy, Annoy.
- Tools: Git, LaTeX.

Experience

- **Insight Data Science** — New York, NY
  Data Science Fellow — *2019 - present*
  - Developed an AI that generates 'shower thoughts' for social media, and deployed it as a bot on twitter. twitter.com/deepThoughtsAI
  - The bot is hosted on AWS, updates its status every hour, interacts with users by responding to mentions.
  - Text is generated by a character-based Recurrent Neural Network trained on reddit posts from r/showerthoughts.
  - Network coded in PyTorch, trained on Google Colab using a GPU. github.com/johncalab/deepShowerThoughts
- **MD Anderson Cancer Center** — Houston, TX
  Research Investigator — *2019*
  - Kicked off the development of an in-house tool for image segmentation of brain tumors.
  - Trained a Convolutional Neural Network on a public dataset of brain MRI scans (BRATS 2017). Implemented different models in PyTorch, and trained on a remote server using a GPU.
  - Code, models, and notebooks available at github.com/johncalab/pytorchbrats.
- **Rice University** — Houston, TX
  G.C. Evans Instructor of Mathematics and National Science Foundation Research Fellow — *2014 - 2018*
  - Published nine research articles in top peer-reviewed mathematical journals, as part of an independent research program in Mathematics. Major output was solving the 'Crepant Resolution Conjecture' in Donaldson–Thomas theory, a problem sitting between Algebraic Geometry and String Theory. arxiv.org/abs/1810.06581
  - Secured two funding grants for research, one grant for travel, and one for a regional conference ($207k total).
  - Delivered sixty-two research talks at various conferences and institutions, including: MIT, Columbia, Brown, and the Institute of Advanced Study at Princeton.
  - Lead professor for eight courses across four semesters, from undergraduate to advanced graduate (including Linear Algebra, Multivariable Calculus and Complex Analysis). Coordinated teams of TAs, designed one course from scratch, and written lecture notes for three courses (available at johncalab.github.io).

Awards

- National Science Foundation, Conference Grant. — *2017*
- National Science Foundation, Mathematical Sciences Postdoctoral Research Fellowship. — *2015*
  (43 awarded in 2015 across all of mathematics, nationwide)
- American Mathematical Society–Simons Foundation, Travel Grant. — *2014*
- Engineering and Physical Sciences Research Council (UK), Doctoral Prize Fellowship (Imperial College London). — *2013*
  (2 awarded in 2013 across all of mathematics at Imperial College)