Rohan Chandra

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RESEARCH INTERESTS

Non Convex Optimization, Theoretical Machine Learning.

EDUCATION

University of Maryland, College Park, MD, USA

- M.S. in Computer Science — Aug 2016 – May 2018
  - Cumulative GPA: 3.837 / 4.000
  - Relevant Courses: Optimization, Machine Learning, Linear Algebra, Probability and Statistics.

Delhi Technological University, New Delhi, India

- B.Tech. in ECE — Aug 2012 – May 2016

RESEARCH EXPERIENCE

Graduate Research Assistant, University of Maryland, College Park, MD, USA

- Created Phasepack — Apr 2017 – Present
  - Phasepack is the **world's first** comprehensive MATLAB based library that benchmarks all classical and contemporary algorithms to solve the problem of Phase Retrieval within a uniform interface, using real world empirical datasets
  - **Supervised a team of 3 undergraduate students and 1 high school student**. My responsibilities included answering questions on theory, troubleshooting problems, and guiding the design of the project.
- Texture Synthesis Using Deep Learning — Aug 2017 – Dec 2017
  - **First author** on the arXiv paper for this work.
  - Used a stacked network of variational autoencoders to generate textures from a small sample of the texture generating neighboring tiles.
  - **A novel loss function**, "FLTBNK", is used for training the texture synthesizer. It is rotational and partially color invariant loss function.

WORK EXPERIENCE

Intern, IIIT, New Delhi, India

- Swarath - The Driverless Car Project — Jan 2016 – Jun 2016
  - Helped design the lane detection algorithm for the perception module using ROS, C++, and OpenCV.
  - Implemented the localization and navigation algorithms used in the planning module.
  - Helped design India's first joystick enabled e-Rickshaw. Won the **first prize** in IIIT Delhi's Research Showcase in March 2016.

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Maryland, College Park, MD, USA

- Discrete Mathematics (Fall 2017) — Aug 2017 – Present
  - Leading Recitation Sections, Office Hours, Grading.
  - **Recognized as "best TA" with outstanding TA evaluations.**
- Introduction to Programming in Java (Spring 2017) — Jan 2017 – May 2017
  - Office Hours, Grading.
- Computer Networks (Fall 2016) — Aug 2016 – Dec 2016
  - Office Hours, Grading.

PUBLICATIONS

ARXIV PREPRINTS

[1] Rohan Chandra, S Grover, K Lee, M Meshry, A Taha, "Texture Synthesis with Recurrent Variational Auto-Encoder," in *arXiv Preprint*, Dec 2017.

[2] Rohan Chandra, Ziyuan Zhong, Justin Hontz, Val McCulloch, Christoph Studer, Tom Goldstein, "Phasepack User Guide," in *arXiv Preprint*, Nov 2017.

JOURNALS

[3] Arthur Benjamin, Rohan Chandra, "Multiplying by 9," *The College Mathematics Journal*, vol.47, no. 4, pp. 281, Sep 2016.

[4] Rashika Anurag, Neeta Pandey, Rohan Chandra, Rajeshwari Pandey, "Voltage Mode Second Order Notch/All - Pass Filter Realization Using OTRA," *i-Manager's Journal on Electronics Engineering*, vol. 6, no. 2, pp. 22–28, Dec 2015.

CONFERENCES

[5] Rohan Chandra, Ziyuan Zhong, Justin Hontz, Val McCulloch, Christoph Studer, Tom Goldstein, "Phasepack: A Phase Retrieval Library," to appear in the *IEEE Proceedings of the 51st Asilomar Conference on Signals, Systems and Computers*, Asilomar, CA, USA, Nov 2017.

ACHIEVEMENTS & STRENGTHS

- **Top Writer** on Quora.
- **State level** chess player.
- Speed math.
  - Published a number of techniques for speed arithmetic without paper and pencil.

PROFESSIONAL SERVICE

Dept of Computer Science, UMD

- Application Reviewer for graduate school admissions. 2016 – Present

TECHNICAL SKILLS Python, MATLAB, LaTeX, Microsoft Office Suite.

DOMAIN SKILLS Machine Learning, Optimization.

INTERESTS Chess, Academia, Mental Math.