Diptodip Deb

Computer Science Fall 2018
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RESEARCH INTERESTS

Machine learning and computer vision as well as applications to biology.

EDUCATION

3rd Year Candidate for Bachelor of Science: Computer Science   *Expected Spring 2018*
Georgia Institute of Technology, Atlanta, GA, USA
Concentration: Intelligence and Theory
Current GPA: 3.89
Relevant Classes: Computer Vision, Machine Learning, Information Theory, Combinatorial Analysis, Advanced Algorithms

SKILLS

Computer Languages: Python, C, MATLAB, LaTeX, Common Lisp, Java
Programs: Vim, Adobe Photoshop, Premiere, and After Effects, Microsoft Office
Operating Systems: *nix, Arch, Ubuntu, OSX, Windows
Lab Equipment: FTIRS (Fourier-transform infrared spectrometer), SEM (scanning electron microscope)
Spoken Languages: English, Bengali, Spanish
Instruments: Tabla (Indian percussion instrument)

PROJECTS

Graf: Automated Cell Counting Software   *Winter 2015 - present*
Independent Project
- Neural network for dense 3D transcript counting in smFISH microscopy.
- Intelligent system for analyzing common images used in *C. elegans* genetics research.

Georgia Tech AI Club Autonomous Car Project   *Spring 2016 - present*
Georgia Insitute of Technology, Atlanta, GA, USA
- Working on self-navigating Buzzmobile (car used in homecoming parade).
- Uses computer vision techniques and the OpenCV library.

EXPERIENCE

Undergraduate Researcher I   *Fall 2015 - present*
Paaby Lab, Georgia Institute of Technology, Atlanta, GA, USA
- Quantitative genetics using *C. elegans model* for natural gene variation.
- Using machine learning approaches to counting cells (random forest algorithm and Graf).

REU Researcher   *Summer 2017*
Machine Learning REU, University of Colorado, Colorado Springs, CO, USA
- Computer vision research on perspective-free counting.
- Worked on applying dilated convolutions to the counting problem.

REU Researcher   *Summer 2016*
BigDataX REU, DataSys Lab, Illinois Institute of Technology, Chicago, IL, USA
- Theoretical computer science research in virtual machine migration.
- Worked on combinatorial optimization techniques.

PUBLICATIONS

D. **Deb** and J. Ventura, "A multicolumn dilated convolution network for perspective-free counting," *IEEE Winter Conference on Applications of Computer Vision (under review)*, 2018.

ACTIVITIES/ LEADERSHIP

Activities:
- Chairman of Georgia Tech Theoretical Computer Science Club (Big O). *Spring 2017 - present*
- Internal Operations officer of Georgia Tech AI Club (The Agency). *Fall 2016 - present*
- Undergraduate Research Ambassador *2017 - present*

Volunteering:
Over 200 hours assisting patients post-op as lead volunteer on cardiac nursing floor and handling medicine packaging at hospital pharmacy at Orlando Regional Medical Center in Orlando, FL, USA.