# Soham Girish Tamba

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## A) Education

1. **M.S., Computer Sc.** at *New York University,* Courant Institute of Mathematical Sciences.

**8/2019 - Present**

- **GPA:** 4.00/4.00
- **Courses:** Computer Vision, Programming Languages, Natural Language Processing with Representation Learning.

2. **B.Tech, Computer Sc. & Eng.** at *National Institute of Technology* Goa.

**8/2014 - 9/2018**

- **GPA:** 9.21/10.00
- **Selected courses:** Introduction to Machine Learning, Soft Computing, Database Systems, Applied Algorithms, Design and Analysis of Algorithms, Software Engineering, Advanced Operating Systems, Mathematics-IV(Probability & Statistics), Mathematics-II(Linear Algebra), Discrete Mathematics.

## B) Technical skills

- **Programming Languages:** Python, C++, Julia, SQL, VHDL, Matlab.
- **Software:** Git, Latex, Google Colab, Microsoft Word.
- **Operating Systems:** Ubuntu, Windows.

## C) Research/Development Activity

1. **Google Summer of Code software developer** at *Julia Programming Language*.

**5/2018 - 8/2018**

- Implemented high performance graph analysis algorithms in Julia.
- Contributed 2,500 lines of code into the LightGraphs code base.
- Routinely used Git for version control and merging code into the LightGraphs code base.
- **Result published in Julia's blog:** https://julialang.org/blog/2019/02/light-graphs

2. **Undergraduate thesis** at *National Institute of Technology Goa*.

**8/2017 - 5/2018**

- **Topic:** Proxy Re-encryption (PRE) schemes.
- Designed PRE for efficient access control in hierarchical group communication.
- Formulated and designed Threshold Progressive PRE.
- Produced 87 page report in Latex.

3. **Research intern** at *Indian Institute of Technology Bombay*.

**5/2017 - 7/2017**

- **Topic:** Approximation Algorithms for variants of Clustering Problem.
- Collaborated with PhD students to design and analyze possible algorithms and heuristics.

4. **Research assistant** to Prof. B. Sharat Chandra Varma at *National Institute of Technology Goa*.

**5/2016 - 8/2016**

- **Topic:** Efficient FPGA implementation of Deep-Q Learning in VHDL.
- Studied Deep Learning FPGA design & transferred it to Deep-Q Learning FPGA design.

## D) **Open source software development mentor**

1. **Google Summer of Code mentor** at *Julia Programming Language*.
**5/2019 - 9/2019**
2. **Julia Seasons of Contributions mentor**
**5/2019 - 9/2019**

- *Advised* student software developers on implementing their projects.
- *Reviewed* code of the participants and provided feedback.

## E) **Online Courses**

1. *Game Theory I* by *Stanford University & University of British Columbia, Coursera*.
**Score:** 98.9%
2. *Machine Learning* by *Stanford University, Coursera*.
**Score:** 96.1%
3. Matrix Methods in Data Analysis, Signal Processing, and Machine Learning (Spring 2018) by MIT OCW.
4. Convolutional Neural Networks for Visual Recognition (Winter 2016) by Stanford.
5. *Advanced Algorithms* (Spring 2016) by MIT.
6. *Design and Analysis of Algorithms* (Spring 2015) by MIT OCW.
7. *Probabilistic Systems Analysis and Applied Probability* (Fall 2013) by MIT OCW.
8. *Introduction to Algorithms* (Fall 2011) by MIT OCW.
9. *Mathematics for Computer Science* (Fall 2010) by MIT OCW.
10. *Introduction to Computer Science and Programming* (Spring 2011) by MIT OCW.

## F) **Problem solving skills (Competitive programming)**

1. Rank 1 in Codetron, 2018, organized by Goa Engineering College.
2. Rank 1 in Programmatics, 2018, organized by NIT Goa.
3. Honorable Mention (Rank 88) in **ACM** ICPC Asia Amritapuri Double Site Regional Contest, 2017.
4. Rank 13 in Inter-NIT Code-a-thon, 2017, organized by NIT Bhopal.
5. Rank 1 in Code Heat, 2016, organized by Manipal Institute of Technology.

*Designed efficient algorithms* to solve ad-oc problems and implemented them in C++.

## G) **Teaching assistantships**

1. CS351: **Design and Analysis of Algorithms**, Spring 2018.
2. CS303: **Theory of Computation**, Fall 2017.
3. CS203: **Discrete Mathematics**, Fall 2017.

- Conducted recitation classes to clarify the concepts taught in class.
- Assisted in the production of assignments.
- Graded assignments.

## H) **Conferences Attended**

1. **Julia Conference 2018** at *University College London*.

**8/2018**

- Conducted *Project Poster Presentation* on my *Google Summer of Code* project.
- Received complete funding from Julia Project and NUMFocus.
- **Blog post:** sohamtamba.github.io/GSoC/gsoc/2018/08/17/week-13.html

2. **Latest Advances in Machine Learning and Data Science 2017** at *NIT Goa*.

**10/2017**

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## I) **Public speaking (Toastmasters)**

**8/2014 - 8/2016**

1. Former member of NIT Goa's Toastmasters club.
2. Second place in NIT Goa Toastmasters Table Topics Contest (2015).
3. Third place in NIT Goa Toastmasters Evaluations Contest (2015).

Delivered speeches during club meetings every few weeks.

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## J) **Organizing activities**

- Head Organizer of Programmatics 2017.
- Head Organizer of Programmatics 2016.

Programmatics is an annual competitive coding event organized by NIT Goa.
**Approximate participant size:** 30.

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