# Suruchi Fialoke

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## Objective

*Computational scientist with 5 years experience in cluster computing, statistics, data analysis and visualization. Passionate about using computational methods to solve science & engineering problems.*

## Education

**University of Pennsylvania** — **June 2017**
**Ph.D. candidate, Chemical and Biomolecular Engineering** — **GPA 3.94/4.0**

**Indian Institute of Technology (IIT), Kharagpur** — **June 2012**
**B.Tech, M.Tech dual degree, Chemical Engineering** — **GPA 8.9/10 (Graduated with Honors)**

## Skills

C & C++, Python, MATLAB, Bash, Cluster computing ★★★★★★★★☆☆
R, HTML/CSS, SQL ★★★★★☆☆☆☆☆
LaTeX, Git, VMD, POV-ray, CAD, Photoshop, Gnuplot, ggplot, ImageMagick, GROMACS ★★★★★★★★★☆

## Courses

*Data Analysis and Statistical Computing* (UPenn, STAT503), *Machine Learning* (Stanford, Coursera), *Data Science Toolbox* (John Hopkins, Coursera), *Python* (UMich, Coursera), *Process Improvement* (UIUC, Coursera)

## Experience

### Ph.D. Candidate, University of Pennsylvania, PA, USA — Sept 2012 – Present

*Dissertation: Computational Design of Non-Sticky Surfaces* — Advisor: Dr. Amish Patel

- **Developed computational studies [GROMACS, C++, Bash, Python]** to explore design principles of non-sticky materials
- **Developed algorithms [C++, Python] to analyze gigabytes of data** to extract physical quantities *e.g.* free energy of drying
- Visualized drying at molecular level & proposed novel surfaces that display non-sticky behavior under extreme conditions
- **Led collaborations** with experimentalists and with group at leading consumer goods company to realize proposed designs

### Research Assistant, Indian Institute of Technology (IIT) Kharagpur, WB, India — Jul 2009 – Jun 2012

- **Patented lithographic technique** for creating textures of different feature heights using single polymeric stamp

### Research Intern, University of Akron, OH, USA — May 2011 – July 2011

- Studied topography of polymer films in presence of nanoparticles; received **invitation to PhD position with fellowship**

### Research Intern, University of Auckland, New Zealand — May 2010 – July 2010

- Identified difference between normal and arthritis affected cow-knee-cartilage by modeling stress response; proposed criteria for arthiritis in humans **[Supervised Machine Learning, MATLAB], received invitation to PhD position**

## Leadership Activities

### Student Consultant, Penn Biotech Group, Wharton Business School — 2016-Present

- Voted best team member in 9-member team, provide marketing/distribution strategies to $28B+ medical device company

### Member, Penn Data Science Group, University of Pennsylvania — 2016-Present

- Active participant in various projects involving Machine Learning and Data Mining

### Presented research in 18 international and local conferences (including AIChE, GRC & ACS) — 2012-16

### Teaching Assistant (2 Courses), University of Pennsylvania — 2013-14

- **Delivered MATLAB & SIMULINK tutorials** for graduate level course, *Introduction to Numerical Methods (ENM502)*

### Co-Founder and Advisor, Students' Alumni Cell, IIT Kharagpur — 2009-12

- Editor of newsletters & magazines, designed web portal, launched brand merchandise with e-commerce company

## Publications & Patent

1. **Suruchi Prakash** *et. al. Spontaneous recovery of superhydrophobicity on nanotextured surfaces*, **Proceedings of the National Academy of Sciences of the United States of America, 113, 5508-5513** — **2016**
2. Nandini Bhandaru, **Suruchi Prakash**, *et. al.*, *Lithographic tuning of polymeric thin film surfaces by stress relaxation* **ACS Macro Letters, 2, 195-200** — **2013**
3. **Patent:** *Method for generation of surface patterns with different feature heights in polymer films coated on planar and non planar surfaces using single stamp* — **Ref: 607/KOL/2012**