Neeraj Kumar
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Computer enthusiast with over three years of experience in building large scale software systems.

Education

- **University of California, Santa Barbara** (Fall 2015 - current)
  PhD Candidate, Computer Science
  Geometric Algorithms, GPA : 3.98/4
  Advisor : *Subhash Suri*

- **University of Waterloo, Canada** (Fall 2013 - 2015)
  Master of Mathematics, Computer Science
  Algorithms and Complexity, GPA : 93.2%
  Thesis: Width properties of control-flow graphs and applications.

- **Indian Institute of Technology, Varanasi, India** (2006 - 2010)
  Bachelors in Computer Science
  CGPA : 8.69/10

Tech Arsenal

- **Programming languages** C++(Proficient), C (Good), Perl, Python (Good), shell-scripts (Good), php

- **Operating systems/Tools** Linux (Ubuntu), GDB (Proficient), version control (git, svn, cvs), awk, sed, etc

Work Experience

- **Graduate Technical Intern, Intel Corporation**, Santa Clara, CA (Summers 2016)
  Geometric Algoritms for Layout Processing.

- **Google Summer of Code, Open Graph Drawing Framework** (Summers 2014)
  Implemented algorithms for computing treewidth of undirected graphs.

- **Senior Software Developer, Mentor Graphics**, India (2010 - Aug 2013)
  Algorithmic solutions for Mentor's next generation emulation platform.

- **Google Summer of Code, ScummVM** (Summers 2010)
  Wrote a game engine for testing ScummVM subsystems.

Publications

- **Improved Approximation Bounds for the Minimum Constraint Removal Problem**

  Sayan Bandyapadhyaya, **Neeraj Kumar**, Subhash Suri and Kasturi Varadrajan at 21st International Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX) 2018, Princeton, USA.

- **Computing Shortest Paths in the Plane with Removable Obstacles**

  Pankaj K Agarwal, **Neeraj Kumar**, Stavros Sintos and Subhash Suri at 16th Scandinavian Symposium and Wrokshops on Algorithm Theory (SWAT) 2018, Malmo, Sweden.

- **Shortest paths in the plane with Violations.**

  John Hershberger, **Neeraj Kumar** and Subhash Suri at 25th European Symposium of Algorithms, (ESA) 2017, Vienna, Austria

- **Counting Convex k-gons in an Arrangement of Line Segments.**

  Martin Fink, **Neeraj Kumar** and Subhash Suri at 28^{th} Canadian Conference on Computational Geometry (CCCG'16), Vancouver, Canada.

- **SiPTA: Signal Processing for Trace-based Anomaly Detection.**

  MM Zeinali, MA Salem, **N Kumar**, G Cutulenco and S Fischmeister, *EMSOFT* '14.

Select Graduate Coursework

- Computational Geometry
- Graph-theoretic Algorithms
- Foundations of Data Science
- Advanced Data Mining and Machine Learning

Other projects

- A neural network based system to identify traffic signs, achieved 99.2% on german traffic database.
- For an advanced operating system course, we performed a holistic analysis of shared library performance on NUMA architectures.
- Practical algorithms for analyzing worst-case execution time of programs.

Miscellaneous

- **Scholarships and Awards**
  - Outstanding Teaching Assistant (UCSB),
  - Lead Teaching Assistant, Computer Science (UCSB), 2017-18.
  - Graduate Entrance Scholarship (UWaterloo),
  - CBSE Merit Scholarship (India)
- **Teaching assistant** for CS341 (Algorithms, UWaterloo), CS 130A, 130B (Algorithms and Data Structures, UCSB).
- **Languages** English (fluent), Hindi(fluent)