

# KRISHNA VAIDYANATHAN

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## CURRENT POSITION

Second year student of the M.Math program at the Cheriton School of Computer Science, University of Waterloo, Canada.

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## AREAS OF INTEREST

Reconfiguration problems, parameterized algorithms, and graph coloring.

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## EDUCATION

**University of Waterloo**, Waterloo, Canada Sep 2015 – May 2017 (expected)  
*M.Math, Computer Science* CGPA: 90.20/100

**PSG College of Technology**, Coimbatore, India Jun 2010 – May 2015  
*Integrated M.Sc, Theoretical Computer Science* CGPA: 8.62/10

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## RESEARCH EXPERIENCE

**Project Assistant** - University of Waterloo, Canada Jan, 2016 – July, 2016  
**Supervisor:** Prof. Robin Cohen

- Extended a course project on Opinion Dynamics in Agent Research to a paper.

**Research Assistant** - University of Waterloo, Canada Sep, 2015 – present  
**Supervisor:** Prof. Naomi Nishimura

- Working on reconfiguration problems in graph coloring.

**Summer Intern** - Indian Statistical Institute, Chennai, India May, 2014 – July, 2014  
**Supervisor:** Dr. Mathew C. Francis

- Worked on a few problems in contact graphs of L-shapes in the plane and  $B_k$ -VPG graphs.

**Research Intern** - Indian Institute of Science, Bangalore, India May, 2013 – Nov, 2014  
**Supervisor:** Prof. L. Sunil Chandran

- Investigated rainbow matchings in the class of strongly edge-colored graphs and found a bound on the maximum rainbow matchings in terms of its minimum degree.

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## INDUSTRY EXPERIENCE

**Software Development Engineer Intern** - Amazon Development Center, Chennai Jan 2015 – July, 2015

- Worked on an internal tool to static analyze codebases by generating a graph of dependencies and isolating sections of the code that is affected by check-ins.
- Worked extensively on Facebook's pfff tool and adding features to enrichen the graph generated by pfff.
- Also ported the graph from facebook/pfff to TitanDB, a graph database, and wrote queries to derive insights from it.
- Code: <https://github.com/krishnavaidy/pfff>

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## PUBLICATIONS

- Robin Cohen, Alan Tsang, Krishna Vaidyanathan, Haotian Zhang. "Analyzing Opinion Dynamics in Online Social Networks". *Accepted, to appear in BigDIA (Big Data and Information Analytics)*.
- Jasine Babu, L. Sunil Chandran, Krishna Vaidyanathan. "Rainbow matchings in strongly edge-colored graphs". Discrete Mathematics 338.7 (2015): 1191-1196.

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## TECHNICAL SKILLS

**Languages** : OCaml, Python.  
**Backend** : MySQL.  
**Platform** : Linux, Windows.  
**Tools** : MATLAB, LaTeX, Coq.

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## COURSES CREDITED

- CS 666:** Design and Analysis of Algorithms - Instructor: Prof. Bin Ma
- CS 798:** Algorithmic Spectral Graph Theory - Instructor: Prof. Lap Chi Lau
- CS 854:** Advanced Topics in Computer Systems: Experimental OS Techniques - Instructor: Prof. Martin Karsten
- CS 886:** Trust Modeling and Online Social Networks - Instructor: Prof. Robin Cohen
- CS 798:** Software Foundations (Coq) - Instructor: Prof. Prabhakar Ragde

## ACHIEVEMENTS

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- Recipient of the "University of Waterloo Graduate Scholarship".
- Adjudged the "Best All Rounder" for the class of 2015 by PSG College of Technology.
- Selected for the "Indian Academy of Science Summer Research Fellowship".

## EXTRA CURRICULAR ACTIVITIES

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- "Graduate Ambassador" for the Cheriton School of Computer Science, University of Waterloo. I answered queries from prospective graduate students about course load, research areas, student life, etc.
- Certified by the Lifesaving Society to perform "Emergency First Aid".
- Completed levels N5 and N4 in the "Japanese Language Proficiency Test".