

Monal Narasimhamurthy

CONTACT INFORMATION	Department of Computer Science 1111 Engineering Dr, Boulder, CO 80309, USA	EMAIL: monal.narasimhamurthy@colorado.edu WEBSITE: http://monal.github.io/
RESEARCH INTERESTS	Formal Methods, Programming Languages	
EDUCATION	University of Colorado Boulder , Boulder, Colorado, USA Ph.D. Student, Computer Science, since Fall 2016 <ul style="list-style-type: none">• Advisor (since Fall 2019): Prof. Sriram Sankaranarayanan• Previously advised by Prof. Matthew Hammer	GPA - 3.93/4.0
	University of Colorado Boulder , Boulder, Colorado, USA M.S., Computer Science, May, 2017	GPA - 3.97/4.0
	Birla Institute of Technology and Science, Pilani , Goa, India B.E.(Hons.), Computer Science, August, 2014	GPA - 7.44/10
GRADUATE COURSEWORK	Machine Learning Computer Aided Verification Chaotic Dynamics Probabilistic Programming Languages Fundamental Concepts of Programming Languages Advanced Techniques for Incremental Computation	Big Data Architecture Design and Analysis of Algorithms Theory of Computation Geospatial Data Analysis User-Centered Design Database Systems
PROFESSIONAL EXPERIENCE	Five AI , Edinburgh, United Kingdom <i>Research intern, advised by Iain Whiteside</i>	May 2021 - Aug 2021
	Microsoft Research Lab , Cambridge, United Kingdom <i>Research intern, advised by Andy Gordon and Simon Peyton Jones</i> Worked with the Excel online team (Project under NDA).	June 2018 - Sep 2018
	Microsoft Research Lab , Bangalore, India <i>Research intern, advised by Aseem Rastogi</i> Implemented a separation logic library for F*, a verification oriented language.	June 2017 - Jan 2018
	Amazon , Seattle, Washington, USA <i>SDE Intern</i> Built a serverless architecture framework for internal roadmap and sprint planning.	May 2016 - Aug 2016
	DirectI , Mumbai, India <i>Developer Operations</i> Developed automation tools and deployed infrastructure for contextual web advertisement platforms.	July 2014 - July 2015
	Apigee , Bangalore, India <i>Software Developer Intern</i> Worked with the Diagnostics team to reduce the customer support ticket resolution time. Built a cloud infrastructure monitoring tool for the DevOps team and contributed to the testing framework.	Jan 2014 - June 2014

RESEARCH	<p>CU Programming Languages and Verification Lab, Boulder, Colorado, USA <i>Research Assistant</i> since Aug 2016</p> <ul style="list-style-type: none"> • Working on data-driven modeling of dynamical systems for control and verification • Worked on extending Adapton, a general-purpose language-based abstraction for incremental computation with Prof. Matthew Hammer
PAPERS AND DRAFTS	<p>Verifying Conformance of Neural Networks: Invited Paper Monal Narasimhamurthy, Taisa Kushner, Souradeep Dutta and Sriram Sankaranarayanan 2019 IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2019</p> <p>Meta-F*: Proof automation with SMT, Tactics, and Metaprograms Guido Martínez, Danel Ahman, Victor Dumitrescu, Nick Giannarakis, Chris Hawblitzel, Cătălin Hrițcu, Monal Narasimhamurthy, Zoe Paraskevopoulou, Clément Pit-Claudel, Jonathan Protzenko, Tahina Ramananandro, Aseem Rastogi, Nikhil Swamy. 28th European Symposium on Programming (ESOP), 2019</p> <p>ML as a Tactic Language, Again Guido Martínez, Danel Ahman, Victor Dumitrescu, Nick Giannarakis, Chris Hawblitzel, Cătălin Hrițcu, Monal Narasimhamurthy, Zoe Paraskevopoulou, Clément Pit-Claudel, Jonathan Protzenko, Tahina Ramananandro, Aseem Rastogi, Nikhil Swamy. ML, 2018</p> <p>Fungi: Typed incremental computation with names Matthew A. Hammer, Kyle Headley, Jana Dunfield, Monal Narasimhamurthy, Dimitrios J. Economou. (In submission, arXiv:1610.00097 [cs.PL])</p>
TEACHING	<p><i>Teaching Assistant</i>, University of Colorado Boulder</p> <ul style="list-style-type: none"> • CSCI 3155: Principles of Programming Languages, Fall 2019 • CSCI 3308: Software Development Tools and Methods Spring 2016
SERVICE AND LEADERSHIP	<p>Artifact Evaluation Committee VMCAI 2021 <i>Co-President</i>, Colorado Data Science Team Fall 2016 - Fall 2019</p>
SKILLS	<ul style="list-style-type: none"> • Languages: Python, OCaml, Scala, Rust, FStar, R, Java, C • Web development: AngularJS, Django, Flask, JS, HTML, CSS • Data processing: Hadoop, Kafka, RabbitMQ, Storm, Spark, Elasticsearch • Data analysis: Tensorflow, Scikit-learn, GDAL, ArcGIS • Databases: MySQL, Redis, Cassandra • Tools: Amazon AWS Cloud, Jenkins, Travis CI, Git
TEACHING OUTREACH	<p>GMR group, Bangalore, India May 2012 - July 2012 <i>Corporate social responsibility intern</i> The organization works towards empowering underprivileged, uneducated youth by teaching them technical skills. Helped design the course curriculum and helped organize a city-wide NGO meet to improve networking opportunities for the students.</p> <p>Udaan, BITS Pilani, Goa, India Aug 2012 - May 2014 <i>Core member</i> Worked towards empowering the housekeeping women on campus through basic education, social activities, awareness workshops and health-camps.</p>