Pradeep Kumar Murukannaiah

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Education

- **PhD in Computer Science** — May 2016
  North Carolina State University — *Raleigh, NC*
  Advisor: Professor Munindar P. Singh
- **MS in Computer Science** — Dec. 2011
  North Carolina State University
  GPA: 4.0
- **BE in Information Science and Engineering** — May 2005
  University Visvesvaraya College of Engineering — *Bangalore*
  First Class with Distinction

Awards and Recognitions

- **Dean's Postdoctoral Fellowship** — 2016–2017
  Department of Software Engineering, Rochester Institute of Technology — *Rochester, NY*
- **Outstanding Research Award** — 2016
  Department of Computer Science, North Carolina State University
- **Departmental Nominee, CGS/ProQuest Distinguished Dissertation Award** — 2016
  Department of Computer Science, North Carolina State University

Research Experience

- **Postdoctoral Research Scientist** — May 2016–Present
  Department of Software Engineering, Rochester Institute of Technology
  Advisor: Professor Naveen Sharma
- **Graduate Research Assistant** — Jan 2010–May 2016
  Department of Computer Science, North Carolina State University

Industry Experience

- **Intern, Google, Inc.** — Summer 2011
  AdPlanner Demographics Team — *Seattle*
  - Developed machine learning techniques for predicting demographics
- **Intern, Duke University Medical Center** — Summer 2009
  Neurobiology of Vocal Communication Lab — *Durham, NC*
  - Migrated a songbird transcriptome database from XML to relational
- **Software Engineer, Alcatel-Lucent** — Jul 2005–Dec 2008
  Optical Networks Management System — *Bangalore*
  - Administered an Oracle database

Professional Activities

- **PhD Symposium Co-Chair** 2016
  Doctoral Symposium on Foundations and Applications of Self-∗ Systems (FAS∗)

- **Information Director** 2013–2016
  ACM Transactions on Internet Technology

- **Program Committee Member**
  - Social Networks and Crowdsourcing Track, IEEE Intl. Conf. on Distributed Computing Systems (ICDCS) 2016
  - Intl. Conf. on Evaluation of Novel Approaches to Software Engineering (ENASE) 2016
  - IEEE Intl. Conf. on Cloud and Autonomic Computing (ICCAC) 2016
  - IEEE Intl. Conf. on Mobile Services (MS) 2013, 2015
  - Intl. Workshop on Multiagent Foundations of Social Computing (SC@AAMAS) 2014, 2015
  - Intl. Conf. on Emerging Ubiquitous Systems & Pervasive Networks (EUSPN) 2015

- **Conference External Reviewer**
  - ACM CHI Conference on Human Factors in Computing Systems (CHI) 2017
  - AAAI Conference on Artificial Intelligence (AAAI) 2012, 2017
  - Symposium on Usable Privacy and Security (SOUPS) 2016

- **Journal Reviewer**
  - Journal of Systems and Software (JSS) 2016
  - Journal of the Association for Information Science and Technology (JASIST) 2016
  - ACM Transactions on Internet Technology (TOIT) 2016
  - Empirical Software Engineering (EmSE) 2015
  - IEEE Internet Computing (IC) 2011, 2013, 2015, 2016
  - ACM Transactions on Intelligent Systems and Technology (TIST) 2013, 2014, 2015
  - IEEE Transactions on Services Computing (TSC) 2014, 2015, 2016

- **Journal Co-reviewer**
  - IEEE Transactions of Software Engineering 2016

Invited Talks

- **Engineering Intelligent Agents on the Internet of Things** Sep. 2016
  PhD Research Colloquium in Computing and Information Sciences, RIT

- **Exploiting Personal Data, Preserving Privacy** Sep. 2015
  Laboratory of Analytic Sciences, NCSU

Teaching and Mentoring

- **Teaching Assistant** 2010–2015
  Department of Computer Science, North Carolina State University
  Courses: Services-oriented computing (five times), Graph theory (once)
  - Conceived, designed and evaluated programming assignments
  - Held office hours to assist students on course material and assignments

- **Term Project Mentor** 2014–2015
  Department of Computer Science, North Carolina State University
  Courses: Social computing (twice)
  - Advised students on designing and conducting semester-long research projects

- **Research Mentor** 2016–2017
  Department of Software Engineering, Rochester Institute of Technology
  - Co-advising a PhD student and an MS student on conducting literature review, defining research problems, and conducting experiments

Research Thrusts

1. **Requirements Engineering** 2015–Present
   Keywords: Crowd-based RE, creativity, human factors, team work, goal modeling
   Collaborators: Prof. Naveen Sharma and Prof. Munindar Singh
   - Requirements for the masses, from the masses
   - Facilitating creativity in RE
   - Goal modeling and conflict analysis
2. **Self-Adaptive Systems** 2012–Present
   Keywords: Agents, modeling, context-awareness, middleware, machine learning, sensors, Internet of things
   Collaborators: Prof. Naveen Sharma and Prof. Munindar Singh
   - Methodology and middleware for engineering self-adaptive applications
   - Machine learning from sensor data
   - Bridging data and requirements
3. **Sociotechnical Systems** 2012–Present
   Keywords: Multiagent systems, social media analysis, geo-social, social norms, argumentation
   Collaborators: Dr. Amit Chopra, Dr. Anup Kalia, Prof. Munindar Singh, and Dr. Guangchao Yuan
   - Understanding norms and engineering normative systems
   - Machine learning social context from weblogs, social media, and sensor data
4. **Engineering Privacy** 2013–Present
   Keywords: Multiuser privacy, privacy incidents, social norms
   Collaborators: Prof. Munindar Singh, Dr. Jessica Staddon, Dr. Jose Such
   - Reasoning about privacy in social settings
   - Understanding privacy perceptions via crowdsourcing
   - Automated techniques for curating a privacy incidents database

Dissertation

- **Engineering personal agents:** 2016
  Toward personalized, context-aware, and privacy-preserving applications
  PK Murukannaiah, North Carolina State University
  Committee: Prof. Munindar Singh, Prof. Jon Doyle, Prof. James Lester, Prof. Tim Menzies, and Dr. Ranga Vatsavai

Publications

Refereed Journal Papers

Note: The number in the last column for journal articles below indicate the journal's 5-year impact factor

J1. **Platys: An active learning framework for place-aware application development and its evaluation.** *TOSEM* 1.67
PK Murukannaiah and MP Singh
ACM Transactions on Software Engineering and Methodology, 24(3):1–33, 2015.

J2. **Platys: From position to place-oriented mobile computing.** *AI Mag* 1.05
L Zavala, PK Murukannaiah, N Poosamani, T Finin, A Joshi, I Rhee, and MP Singh.
AI Magazine, 36(2):50–62, 2015.

J3. **Platys Social: Relating shared places and private social circles.** *IC* 2.50
PK Murukannaiah and MP Singh.
IEEE Internet Computing, 16(3):53–59, 2012.

Journal Papers Under Minor Revision

J4. **Sharing policies in multiuser privacy scenarios: Incorporating context, preferences, and arguments in decision making.** *TOCHI* 1.61
R Fogues, PK Murukannaiah, J Such,and MP Singh.
Submitted to ACM Transactions on Computer-Human Interaction, 1–26, 2016.

Journal Columns

J5. **Engineering privacy in social applications.** *IC* 2.30
PK Murukannaiah, N Ajmeri, and MP Singh.
IEEE Internet Computing, 20(2):72–76, 2016.

J6. **Understanding location-based user experience.** *IC* 2.47
PK Murukannaiah and MP Singh.
IEEE Internet Computing, 18(6):53–59, 2014.

Refereed Conference Papers

Note: The numbers in last column for conference papers, are conference acceptance rates

C7. **Acquiring creative requirements from the crowd: Understanding the influences of individual personality and creative potential in Crowd RE** *RE* 27.8%
PK Murukannaiah, N Ajmeri, and MP Singh.
In Proc. IEEE 24th International Requirements Engineering Conference, 176–185, Beijing, 2016.

C8. **Percimo: A personalized community model for location estimation in social media.** *ASONAM* 13.6%
G Yuan, PK Murukannaiah, and MP Singh.
In Proc. International Conference on Advances in Social Networks Analysis and Mining, 271–278, San Francisco, 2016.

C9. **Resolving goal conflicts via argumentation-based analysis of competing hypotheses** *RE* 19.8%
PK Murukannaiah, AK Kalia, PR Telang, and MP Singh.
In IEEE 23rd International Requirements Engineering Conference, 156–165, Ottawa 2015.

C10. **TRACE: A dynamic model of trust for people-driven service engagements.** *ICSOC* 24.2%
AK Kalia, PK Murukannaiah, and MP Singh.
In Proc. 13th International Conference on Service Oriented Computing, 353–361, Goa, 2015.

C11. **Xipho: Extending Tropos to engineer context-aware personal agents.** *AAMAS* 23.8%
PK Murukannaiah and MP Singh.
In Proc. International Conference on Autonomous Agents and MultiAgent Systems, 309–316, Paris, 2014.

C12. **Exploiting sentiment homophily for link prediction.** *RecSys* 14.9%
G Yuan, PK Murukannaiah, Z Zhang, and MP Singh.
In Proc. ACM Conference on Recommender Systems ,17–24, Foster City, CA 2014.

C13. **Structure discovery queries in disk-based Semantic Web databases.** *SKG* —
K Anyanwu, PK Murukannaiah, and A Maduko.
In Proc. IEEE International Conference on Semantics, Knowledge, and Grid 336–342, Beijing, 2008.

Invited Conference Papers

C14. **PrIncipedia: A privacy incidents encyclopedia** *PLSC*
PK Murukannaiah, J Staddon, H Lipford, and B knijnenburg.
The 9th Annual Privacy Law Scholars Conference, 2016.

Book Chapter

B15. **Dimensionality reduction.** *Graph Mining*
MR Marri, L Ramachandran, PK Murukannaiah, et al.
In Practical Graph Mining with R, CRC Press, 2013.

Refereed Workshops, Demos, and Symposia

O16. **Argumentation for multi-party privacy management (Position paper)** *ACySe@AAMAS*
R Fogues, PK Murukannaiah, JM Such, A Espinosa, A Garcia-Fornes, and MP Singh.
International Workshop on Agents and CyberSecurity, 2015.

O17. **Reasoning about context and engineering context-aware agents (Doctoral Cons.)** *DC@AAMAS*
PK Murukannaiah
In Proc. International Conference on Autonomous Agents and MultiAgent Systems, 1733–1734, 2014.

O18. **Platys: a framework for supporting context-aware personal agents (Demo.)** *Demo@AAMAS*
PK Murukannaiah, R Fogues, and MP Singh.
In Proc. International Conference on Autonomous Agents and MultiAgent Systems, 1689–1690, 2014.

O19. **Platys: User-Centric Place Recognition.** *Context@AAAI*
C-W Hang, PK Murukannaiah, and MP Singh.
AAAI Workshop on Activity Context-Aware System Architectures, 2013.