Primal **Pappachan**

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Employment

Assistant Professor *Portland OR*
PORTLAND STATE UNIVERSITY *2023 -*
- Department of Computer Science

Postdoctoral Scholar *State College, PA*
PENNSYLVANIA STATE UNIVERSITY *2021 - 2023*
- College of Information Sciences and Technology

Education

University of California, Irvine *2021*
PH.D IN COMPUTER SCIENCE

University of Maryland, Baltimore County *2014*
M.S IN COMPUTER SCIENCE

Government Engineering College, Thrissur *2011*
B.TECH IN COMPUTER SCIENCE AND ENGINEERING

Publications

CONFERENCE PROCEEDINGS

Differentially Private Streaming Data Release under Temporal Correlations via Post-processing
Xuyang Cao, Yang Cao, **Primal Pappachan**, Atsuyoshi Nakamura, Masatoshi Yoshikawa
37th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'23), 2023

User Customizable and Robust Geo-Indistinguishability for Location Privacy
Primal Pappachan, Chenxi Qiu, Anna Squicciarini, Vishnu Sharma Hunsur Manjunath
Proceedings of the 26th International Conference on Extending Database Technology (EDBT), 2023

Don't Be a Tattle-Tale: Preventing Leakages through Data Dependencies on Access Control Protected Data
Primal Pappachan, Shufan Zhang, Xi He, Sharad Mehrotra
Proc. Very Large Databases (VLDB) Endow. 15.11 (2022) pp. 2437–2449. 2022

TrafficAdaptor: An Adaptive Obfuscation Strategy for Vehicle Location Privacy Against Traffic Flow Aware Attack
Chenxi Qiu, Yan Li, Anna Squicciarini, Juanjuan Zhao, Chengzhong Xu, **Primal Pappachan**
ACM International Conference on Advances in Geographic Information Systems (SIGSPATIAL), 2022

Sieve: A Middleware Approach to Scalable Access Control for Database Management Systems
Primal Pappachan, Roberto Yus, Sharad Mehrotra, Johann-Christoph Freytag
Proc. Very Large Databases (VLDB) Endow. 13.11 (2020) pp. 2424–2437. 2020

Rafiki: A semantic and collaborative approach to community health-care in underserved areas
Primal Pappachan, Roberto Yus, Anupam Joshi, Tim Finin
International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom), 2014

WORKSHOP PROCEEDINGS

Designing privacy preserving data sharing middleware for internet of things
Sameera Ghayyur, **Primal Pappachan**, Guoxi Wang, Sharad Mehrotra, Nalini Venkatasubramanian
DATA Workshop @ SenSys, 2020

Towards Privacy-Aware Smart Buildings: Capturing, Communicating, and Enforcing Privacy Policies and Preferences
Primal Pappachan, Martin Degeling, Roberto Yus, Anupam Das, Sruti Bhagavatula, William Melicher, Pardis Emami Naeini, Shikun Zhang, Lujo Bauer, Alfred Kobsa, Sharad Mehrotra, Norman M. Sadeh, Nalini Venkatasubramanian
ICDCS Workshops, 2017

Building a Mobile Applications Knowledge Base for the Linked Data Cloud
Primal Pappachan, Roberto Yus, Prajit Kumar Das, Sharad Mehrotra, Tim Finin, Anupam Joshi
MoDeST Workshop @ ISWC, 2015

Are Apps Going Semantic? A Systematic Review of Semantic Mobile Applications
Roberto Yus, **Primal Pappachan**
MoDeST Workshop @ ISWC, 2015

A Semantic Context-Aware Privacy Model for FaceBlock
Primal Pappachan, Roberto Yus, Prajit Kumar Das, Tim Finin, Eduardo Mena, Anupam Joshi
PrivOn Workshop @ ISWC, 2014

Semantics for Privacy and Shared Context
Roberto Yus, **Primal Pappachan**, Prajit Kumar Das, Tim Finin, Anupam Joshi, Eduardo Mena
PrivOn Workshop @ ISWC, 2014

Poster/Demos

CORGI: An interactive framework for Customizable and Robust Location Obfuscation
Primal Pappachan, Vishnu Sharma Hunsur Manjunath, Chenxi Qiu, Anna Squicciarini, Hailey Onweller
IEEE International Conference on Data Engineering (ICDE), 2023

The ZotBins solution to waste management using internet of things
Joshua Cao, Jesse Chong, Marissa Lafreniere, Owen Yang, **Primal Pappachan**, Sharad Mehrotra, Nalini Venkatasubramanian
SenSys, 2020

SemIoTic: Bridging the Semantic Gap in IoT Spaces
Sumaya Almanee, Georgios Bouloukakis, Daokun Jiang, Sameera Ghayyur, Dhrubajyoti Ghosh, Peeyush Gupta, Yiming Lin, Sharad Mehrotra, **Primal Pappachan**, Eun-Jeong Shin, Nalini Venkatasubramanian, Guoxi Wang, Roberto Yus
BuildSys@SenSys, 2019

Mobipedia: Mobile Applications Linked Data
Primal Pappachan, Roberto Yus, Prajit Kumar Das, Sharad Mehrotra, Tim Finin, Anupam Joshi
International Semantic Web Conference (Posters & Demos), 2015

FaceBlock: privacy-aware pictures for google glass
Roberto Yus, **Primal Pappachan**, Prajit Kumar Das, Eduardo Mena, Anupam Joshi, Tim Finin
MobiSys, 2014

Theses

A Semantic and Collaborative Approach to Community Health-care in Underserved Areas
UMBC (2014) M.S. Dissertation

Fine Grained Access Control Policies in Data Management Systems for Internet of Things Applications
UC Irvine (2021) Ph.D. Dissertation

Mentoring Experience

Graduate Students
- Anadi Shakya, P.h.D. at Portland State University (2023 - now)

- Nick Morales, P.h.D. at Portland State University (2023 - now)

- Steve Willoughby, P.h.D. at Portland State University (2023 - now)

- Esme Basnet, M.S. at Portland State University (2023 - now)

- Joonyoung Cha, Ph.D. at Pennsylvania State University (2022-now)

- Abhiroop Tippavajjula, M.S at Pennsylvania State University (2022- now)

- Vishnu Sharma H. M., M.S. at Pennsylvania State University (2021 - 2023)

Undergraduate Students
- Hailey Onweller, B.S. (Undergraduate Honors Thesis) at Pennsylvania State University (2021 - now)

- Eileen Pi, B.S. (Undergraduate Honors Thesis) at Pennsylvania State University (2021-2022)

- Brianna Hernandez, B.S. at University of California, Irvine (2020-2021)

- Marissa Lafreniere, B.S. at University of California, Irvine (2018-2021)

- Jesse Chong, B.S. (Undergraduate Honors Thesis) at University of California, Irvine (2018-2021)

- Justin Yue, B.S. at University of California, Irvine (2020-2021)

- Owen Yang, B.S. at University of California, Irvine (2017-2020)

- Joshua Cao, B.S. at University of California, Irvine (2017-2020)

- Anthony Luu, B.S. at University of California, Irvine (2018-2020)

- Robin Cristobal, B.S. at University of California, Irvine (Summer 2019)

Teaching Experience

Instructor

College of IST, Pennsylvania State University *Aug. 2022 - Dec 2022*

- IST 140: Introduction to Application Programming

Teaching Assistant

School of Computer Science, UC Irvine *Jan. 2014 - Dec 2019*

- ICS 122A: Introduction to Data Management (2016, 2019)
- ICS 143A: Principles of Operating Systems (2018)
- ICS 6D: Discrete Math (2015)
- ICS 6B: Boolean Algebra & Logic (2014, 2015)

Service Experience

ORGANIZING COMMITTEE

2023	**Private, Secure, and Trustworthy IoT Data Management Workshop (ASTRIDE) at ICDE**, Co-Organizer

PROGRAM COMMITTEE MEMBER

2024	**Very Large Data Bases (VLDB)**, Research Track
2023	**Conference on Information and Knowledge Management (CIKM)**, Demo Track
2023	**Workshop on Privacy Algorithms in Systems (PAS) at CIKM**, Research Track
2023	**International Conference on Data Engineering (ICDE)**, Research Track
2023	**Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)**, Research Track
2022	**FATEsys (SenSys/BuildSys Workshop)**, Research Track
2022	**IoT and Edge Computing (IE) at ACM/SIGAPP Symposium On Applied Computing**, Research Track
2022	**Interoperability (INTOP) at ACM/SIGAPP Symposium On Applied Computing**, Research Track
2015	**Workshop on Mobile Deployment of Semantic Technologies (MoDeST) at ISWC**, Research Track

EXTERNAL REVIEWER

2022	**Transactions on Dependable and Secure Computing (TDSC)**, Research Track
2022	**Annual Computer Security Applications Conference (ACSAC)**, Research Track
2021	**Symposium on Cyber Security Cryptology and Machine Learning (CSCML)**, Research Track
2019	**International Conference on Management of Data (SIGMOD)**, Research Track
2018	**European Conference on Information Systems (ECIS)**, Research Track
2016	**International Middleware Conference**, Research Track

UNIVERSITY SERVICE

2023-now	**Computer Science Department**, Graduate Admission Committee, Portland State University
2021-2023	**Executive Council Member**, Penn State Postdoc Society, Pennsylvania State University
2017-2021	**Research Mentor & Advisor**, ZotBins: A Smart Space Initiative for Zero Waste, University of California, Irvine
2016-2018	**International Student Peer Mentor**, Graduate InterConnect Program, University of California, Irvine
2012-2014	**Baltimore Code Craftsmanship meetup group** , Co-organizer, University of Maryland, Baltimore County
2013-2014	**ACM UMBC Chapter**, Treasurer, University of Maryland, Baltimore County
2013-2014	**EKTA: Indian Student Organization**, Official committee member, University of Maryland, Baltimore County

Recognition

RESEARCH FUNDING

2022	**Penn State Center for Socially Responsible AI**, Towards data privacy and security in the era of digital agriculture. Anna Squicciarini, Paul Esker, Primal Pappachan, and Mladen Cukak. Collaboration Pilot Funding ($25,000)
2021	**Penn State Center for Security Research and Education**, A Policy-driven Adaptive Obfuscation Mechanism for Location-based Services. Anna Squicciarini, and Primal Pappachan. Seed Grant ($15,000)
2015	**Google IoT Technology Research Award Pilot**, Primal Pappachan, and Sharad Mehrotra ($5000)

AWARDS

2017	**People's Choice Award**, Graduate Research Symposium, UCI
2017	<u>**Best Poster Award**</u>, Computer Science Research Showcase, UCI
2014	**Graduate Fellowship**, Computer Science Department of UCI
2011	**Google Summer of Code (GSoC)**, Komodo Open Lab, Remote Internship

TRAVEL GRANTS

2022	**Travel Award**, Penn State Postdoc Travel Awards Program
2022	**VLDB 2022**, Conference Travel Grant
2020	**VLDB 2020**, Conference Travel Grant
2019	**VLDB 2019**, Conference Travel Grant
2017	**ICDE 2017, ICDCS 2017**, Conference Travel Grant
2015	**ISWC 2015**, Conference Travel Grant
2014	**ISWC 2014**, Conference Travel Grant
2012	**Travel Fellowship**, IIT Bombay Travel Award to attend PyCon Asia Pacific

PRESS

2022	**The Conversation**, Smart devices spy on you: 2 computer scientists explain how IoT …
2020	**UCI News**, UCI researchers use campus as test bed for coronavirus contact tracing system
2020	**UCI CS News**, ZotBins and Zero Waste Anteaters Support UC Goal for 2020
2017	**UCI CS News**, CS Research Showcase continues to provide a platform for students to showcase their work
2015	**Nature**, What could derail the wearables revolution?

Work Experience

University of California, Irvine   *Irvine CA, USA*
GRADUATE STUDENT RESEARCHER   *Sept. 2015 - 2021*

University of Maryland, Baltimore County   *Baltimore MD, USA*
GRADUATE STUDENT RESEARCHER   *Jan. 2013 - Aug 2014*

Picwell   *Philadelphia PA, USA*
SUMMER SOFTWARE ENGINEER   *May. 2013 - Aug 2013*

<u>**FOSSEE**</u>, **Indian Institute of Technology (IIT) Bombay**   *Mumbai, India*
RESEARCH ASSISTANT & DEVELOPER   *July. 2011 - July 2012*

<u>**Google Summer of Code (Komodo Open Lab)**</u>   *Ontario, Canada*
STUDENT DEVELOPER (REMOTE)   *May. 2011 - August 2011*

Selected/Invited Talks

HOLISTIC DATA PROTECTION: PROTECTING DATA FROM UNAUTHORIZED ACCESS AND UNWANTED INFERENCES
- Invited talk - Department of Computer Science, Portland State University, 2023
- Invited talk - College of Information Science and Technology, University of Nebraska at Omaha, 2023
- Invited talk - Department of Computer Science, Tulane University, 2023
- Invited talk - Department of Cybersecurity Engineering, George Mason University, 2023

USER CUSTOMIZABLE AND ROBUST GEO-INDISTINGUISHABILITY FOR LOCATION PRIVACY
- Invited talk - Department of Computer Science, University of Maryland, Baltimore County. 2023

A MIDDLEWARE APPROACH TO SCALABLE ACCESS CONTROL FOR DATABASE MANAGEMENT SYSTEMS
- Invited talk - Department of Computer Science, University of Maryland, Baltimore County, 2022

ZOTBINS: SMART SPACE INITIATIVE FOR ZERO WASTE
- Invited talk - Department of Computer Science, University of Southern California, 2021

TOWARDS PRIVACY-AWARE BIG DATA: SPECIFICATION AND ENFORCEMENT OF PRIVACY POLICIES AT SCALE
- Selected Talk - Associated Graduate Students Symposium in University of California, Irvine, 2017

LIFE AS A PHD STUDENT
- Invited talk - Department of Computer Science, Government Engineering College, Thrissur, 2015

PYTHONIZING THE INDIAN ENGINEERING EDUCATION
- Invited talk - Python Conference (PyCon) Asia Pacific, Singapore, 2012

- Invited talk - DroidCon India, Bengaluru, 2011

References

1) Prof. Anna Squicciarini
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Pennsylvania State University
State College, PA 16802
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2) Prof. Sharad Mehrotra
Department of Computer Science
University of California
Irvine, CA 92697
📞+1 949 824-5975
✉ sharad@ics.uci.edu

3) Prof. Xi He
Department of Computer Science
University of Waterloo
Waterloo, Ontario, N2L 3G1
📞+1 519 888-4567
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4) Prof. Johann-Christoph Freytag
Institut für Informatik
Humboldt-Universität zu Berlin
D-10099 Berlin
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