Sanjay Krishnan

Personal Data

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Education

Fall 2012 - Current	M.S/Ph.D in Computer Science **University of California-Berkeley** | GPA: 3.86/4
Fall 2008 - May 2012	B.S in EECS **University of California-Berkeley** | GPA: 3.84/4

Academic Research

Undergraduate and Graduate Research

Current	M.S/Ph.D Research at UC Berkeley RISELab
Sep 2012 - Jan 2016	M.S/Ph.D Research at UC Berkeley AMPLab
Jan 2010 - Sep 2012	Undergraduate Researcher at Berkeley Automation Laboratory

Other Affiliations

Jan 2016 -	UC Berkeley Connected Communities Initiative
Jan 2016 -	CPAR: CITRIS People and Robots
Jan 2010 - Jan 2016	UC Berkeley Data and Democracy Initiative
Sep 2013 - Sep 2014	Cal-MR: Medical Robotics at UC Berkeley

Publications and Presentations

Formal publications are listed in bold.

Database Systems

1. **Yeouhnoh Chung, Sanjay Krishnan , Tim Kraska. A Data Quality Metric (DQM). How to Estimate the Number of Undetected Errors in Data Sets. PVLDB 10(12): 961-974 (2017).**
2. Sanjay Krishnan, Eugene Wu. PALM: Machine Learning Explanations For Iterative Debugging. HILDA@SIGMOD 2017: 10
3. Xu Chu, Ihab F. Ilyas, Sanjay Krishnan, Jiannan Wang: Data Cleaning: Overview and Emerging Challenges. SIGMOD Tutorial 2016: 2201-2206
4. **Sanjay Krishnan, Jiannan Wang, Michael J. Franklin, Ken Goldberg, Tim Kraska: PrivateClean: Data Cleaning and Differential Privacy. SIGMOD Proceedings 2016: 937-951**
5. Sanjay Krishnan, Daniel Haas, Michael J. Franklin, Eugene Wu: Towards reliable interactive data cleaning: a user survey and recommendations. HILDA@SIGMOD 2016: 9

6. Sanjay Krishnan, Eugene Wu, Michael Franklin, Ken Goldberg, Jiannan Wang. ActiveClean: An Interactive Data Cleaning Framework For Machine Learning. SIGMOD 2016 Demo.
7. **Sanjay Krishnan, Jiannan Wang, Eugene Wu, Michael J. Franklin, Ken Goldberg: ActiveClean: Interactive Data Cleaning For Statistical Modeling. PVLDB 9(12): 948-959 (2016)**
8. **Sanjay Krishnan, Jiannan Wang, Michael J. Franklin, Ken Goldberg, Tim Kraska, Tova Milo, Eugene Wu: SampleClean: Fast and Reliable Analytics on Dirty Data. IEEE Data Eng. Bull. 38(3): 59-75 (2015)**
9. **Sanjay Krishnan, Jiannan Wang, Michael J. Franklin, Ken Goldberg, Tim Kraska: Stale View Cleaning: Getting Fresh Answers from Stale Materialized Views. PVLDB 8(12): 1370-1381 (2015)**
10. Daniel Haas, Sanjay Krishnan, Jiannan Wang, Michael J. Franklin, Eugene Wu. Wisteria: Nurturing Scalable Data Cleaning Infrastructure. VLDB 2015 Demo.
11. **Jiannan Wang, Sanjay Krishnan, Michael Franklin, Ken Goldberg, Tim Kraska, Tova Milo. A Sample-and-Clean Framework for Fast and Accurate Query Processing on Dirty Data. SIGMOD Proceedings, Jun. 2014**
12. Liwen Sun, Sanjay Krishnan, Reynold S. Xin and Michael J. Franklin. A Partitioning Framework for Aggressive Data Skipping. VLDB 2014 Demo.
13. **Liwen Sun, Michael J. Franklin, Sanjay Krishnan, Reynold S. Xin: Fine-grained partitioning for aggressive data skipping. SIGMOD Proceedings 2014: 1115-1126**

Robotics

1. Caleb Chuck, Michael Laskey, Sanjay Krishnan, Ruta Joshi, Ken Goldberg. Statistical Data Cleaning for Deep Learning of Automation Tasks from Demonstrations. CASE 2017.
2. Aimee Goncalves*, Vatsal Patel*, Sanjay Krishnan*, Daniel Seita, Carloyn Chen, David Gealy, Walter Doug Boyd, Ken Goldberg. Surgical Cutting of Deformable Tissues under Rythmic Motion. CASE 2017.
3. Carolyn Chen, Sanjay Krishnan, Michael Laskey, Roy Fox, Ken Goldberg. An algorithm and user study for teaching bilateral manipulation via iterative best response demonstrations. CASE 2017.
4. **Michael Laskey, Caleb Chuck, Jonathan Lee, Jeffrey Mahler, Sanjay Krishnan, Kevin Jamieson, Anca Dragan, Ken Goldberg. Comparing Human-Centric and Robot-Centric Sampling for Robot Deep Learning from Demonstrations. ICRA 2017 4719-4726.**
5. **Brijen Thananjeyan,Animesh Garg, Sanjay Krishnan, Carolyn Chen, Lauren Miller, Ken Goldberg. Multilateral Surgical Pattern Cutting in 2D Orthotropic Gauze with Deep Reinforcement Learning Policies for Tensioning. ICRA 2017 4614-4621.**
6. **Sanjay Krishnan, Animesh Garg, Richard Liaw, Brijen Thananjeyan, Lauren Miller, Florian T. Pokorny, Ken Goldberg. SWIRL: A Sequential Windowed Inverse Reinforcement Learning Algorithm for Robot Tasks With Delayed Rewards. Algorithmic Foundations of Robotics 2016. Springer STAR**
7. **Sanjay Krishnan, Animesh Garg, Sachin Patil, Colin Lea, Gregory Hager, Pieter Abbeel, Ken Goldberg. Transition State Clustering: Unsupervised Surgical Task Segmentation For Robot Learning. International Journal of Robotics Research.**
8. **Adithyavairavan Murali, Animesh Garg, Sanjay Krishnan, Florian T. Pokorny, Pieter Abbeel, Trevor Darrell, Ken Goldberg: TSC-DL: Unsupervised trajectory segmentation of multi-modal surgical demonstrations with Deep Learning. ICRA 2016: 4150-4157**
9. **Sanjay Krishnan, Animesh Garg, Sachin Patil, Colin Lea, Gregory Hager, Pieter Abbeel, and Ken Goldberg. "Transition state clustering: Unsupervised surgical trajectory segmentation for robot learning." ISRR. Springer STAR. 2015.**
10. **Jeffrey Mahler, Sanjay Krishnan, Michael Laskey, Siddarth Sen, Adithyavairavan Murali, Ben Kehoe, Sachin Patil, Jiannan Wang, Mike Franklin, Pieter Abbeel, Kenneth Y. Goldberg: Learning accurate kinematic control of cable-driven surgical robots using data cleaning and Gaussian Process Regression. CASE 2014: 532-539**

Machine Learning

1. Roy Fox*, Sanjay Krishnan*, Ken Goldberg, Ion Stoica. Multi-Level Discovery of Deep Options. Arxiv Preprint 2017 (Under Review).
2. Tejas Kannan, Sanjay Krishnan. Exploring the Sensitivity of Policy Gradients to Observation Noise. RLDM 2017.

3. **Martin Jaggi, Virginia Smith, Martin Takác, Jonathan Terhorst, Sanjay Krishnan, Thomas Hofmann, Michael I. Jordan: Communication-Efficient Distributed Dual Coordinate Ascent. NIPS 2014: 3068-3076**

Social Media

1. **Brandie Nonnecke, Sanjay Krishnan, Jay Patel, Mo Zhou, Laura Byaruhanga, Dorothy Masinde, Maria Elena Meneses, Alejandro Martin del Campo, Camille Crittenden, Kenneth Y. Goldberg: DevCAFE 1.0: A participatory platform for assessing development initiatives in the field. GHTC 2015: 437-444**
2. Mo Zhou, Alison Cliff, Sanjay Krishnan, Brandie Nonnecke, Camille Crittenden, Kanji Uchino, Ken Goldberg. M-CAFE 1.0: Motivating and Prioritizing Ongoing Student Feedback During MOOCs and Large on-Campus Courses using Collaborative Filtering. Proceedings of the 16th Annual ACM Conference on Information Technology Education 2015.
3. Mo Zhou, Alison Cliff, Allen Huang, Sanjay Krishnan, Brandie Nonnecke, Kanji Uchino, Sam Joseph, Armando Fox, and Ken Goldberg.M-CAFE: Managing MOOC Student Feedback with Collaborative Filtering. In Learning@Scale 2015.
4. Jay Patel, Gil Gershoni, Sanjay Krishnan, Matti Nelimarrka, Brandie Nonnecke, Ken Goldberg.A Case Study in Mobile-Optimized vs. Responsive Web Application Design. In Mobile HCI 2015
5. Matti Nelimarkka, Brandie Nonnecke, Sanjay Krishnan, Tanja Aitamurto, Allen Ching-Chang Huang, Gavin Newsom, Conrad Gregory, Jay Patel, Daniel Catterson, Camille Crittenden, John Scott, Chris Garland, and Ken Goldberg. Comparing Three Online Civic Engagement Platforms using the Spectrum of Public Participation. Internet, Policy, and Politics Conference on Crowdsourcing for Politics and Policy (IPP2014). Oxford, UK. Sept, 2014.
6. **Sanjay Krishnan, Jay Patel, Michael J. Franklin, Ken Goldberg: A methodology for learning, analyzing, and mitigating social influence bias in recommender systems. Reccomender Systems 2014: 137-144**
7. Sanjay Krishan, Ken Goldberg, Yuko Okubo, Kanji Uchino. Using a Social Media Platform to Explore How Social Media Can Enhance Primary and Secondary Learning. The Sixth Conference of MIT's Learning International Networks Consortium. June 2013

Teaching Experience

Fall 2016	Co-Lecturer Industrial Engineering and Operations Research 66
Spring 2011	Lab TA Electrical Engineering and Computer Science 122
Spring 2010	Student Facilitator Computer Science 198

Academic Awards

SIGMOD 2016	Best Demonstration
IEEE GHTC 2015	Best Paper
2015	Sage Scholar Award
2012	B.S Graduate With Honors

Professional Experience

May 2011 - Sep 2012	**Lead Systems Engineer at Hybrid Wisdom Labs**. Developed an elastic cloud-based data analysis platform for a social CRM application.
Sep 2010 - Sep 2012	**Site Manager at the Open Computing Facility** Supervised a student-run data center of 20+ Linux servers.