

# Mukesh Kumar Saini

## Curriculum Vitae

Indian Institute of Technology Ropar  
Computer Science and Engineering  
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SPECIALIZATION     Multimedia Systems, Video Analytics, Machine Learning

RESEARCH INTERESTS     Surveillance, Automatic Movie Making

BASIC INFORMATION     Present Employer: Indian Institute of Technology Ropar  
Position Title: Assistant Professor  
Start Date: July 2016

EDUCATION     **PhD, National University of Singapore**, Republic of Singapore  
School of Computing, Apr. 2012.

- Dissertation Topic: Privacy Aware Surveillance System Design
- Advisor: Prof. Mohan S. Kankanhalli

**M. Tech., Indian Institute of Science**, Bangalore, India

Department of Electronic Systems Engineering (formerly known as CEDT), Jul., 2006

- Project Topic: Design and Implementation of Network Based Video Surveillance System
- Advisor: Prof. Joy Kuri

**B. Eng., Rajasthan University**, Jaipur, India

Electronics and Communication, May, 2004

PROFESSIONAL EXPERIENCE     **Indian Institute of Technology**, Ropar  
*Assistant Professor*  
Teaching, Research, Administrative Work

July 2016 - Present

**University of Ottawa**, Canada

*Post-Doctoral Researcher*

May, 2013 - July, 2016

Co-supervising 8 master and 2 PhD students. The research areas include Surveillance, Internet of Things (Vehicles), Social Network Analysis, and Cloud-based Multimedia Systems.

**National University of Singapore**, Singapore

*Post-Doctoral Researcher*

Sep., 2011 - Apr., 2013

Worked on Jiku Director project to create online video mashup from simultaneously recorded videos.

**The University of Winnipeg**, Winnipeg, Canada

*Exchange researcher*

Sep., 2009 - Feb., 2010

Worked on privacy modeling and functionality delegation in multimedia surveillance systems.

**LSI Logic**, Bangalore, India

*Design Engineer*

Aug., 2006 - Nov., 2006

Worked on design and verification of hard disk controllers.

## HONORS AND AWARDS

1. **Best Technical Paper** at Springer International Conference on Internet of Vehicles, Beijing, 2014.
2. **Best Technical Demo** award at ACM Multimedia, Barcelona, Spain, 2013
3. **Qualcomm Student Travel Grant** for IEEE ICME 2011
4. **Research Grant** Under Canadian Commonwealth Exchange Program (Asia-Pacific), Winnipeg, Canada, 2009
5. **Graduate Student Representative**, School of Computing, National University of Singapore, 2009
6. National University of Singapore **Research Scholarship**, Singapore, 2007-2011
7. 8 university travel grants to attend conferences

## TEACHING EXPERIENCE

### *Courses*

- CSL201: **Data Structures**, Semester I, 2016-17.
- CSP203: **Software Systems Lab**, Semester II, 2016-17.
- CSL607: **Multimedia Systems**, Semester II, 2016-17.

### *Teaching Assistant*

Duties include Weekly Tutorials and Consultation.

- CS2106: **Operating Systems**, Spring 2009.
- CS3220: **Computer Architecture**, Fall 2010.

### *Guest Lecturer*

- GACS-7204: **Multimedia Computing and Applications**, Fall 2009. *em CSI 7163A: Multimedia Communications, Fall 2014.*

## MENTORING EXPERIENCE

### **PhD Students**

Duties include brainstorming, problem refinement, research guidance, planning performance evaluation and paper writing.

- Sultan Alhazmi: Automatic Fatigue Detection Through Driving Performance.
- Kazi Masudul Alam: Social Internet of Vehicles

### **Master Students**

Duties include identifying research problem, ensuring student contributes both to the research and implementation, teaching preliminary skills required for research such as designing experiments, writing papers, and making presentations. Duties also include thesis review and editing.

- Shawn Dexter: Need-Satisfier Ontology for Internet of Things
- Haolin Guo: Cloud-Based Framework for Infotainment System
- Shally Bhardwaj: Personality Detection From Social Network Data
- Ali A. Danesh: Automatic Media Redirection
- Fatimah Al-Zamzami: Building Multimedia Stories From Social Network Data
- Hao Kuang: A Real-Time Smart Assistant for Video Surveillance Through Handheld Devices
- Mohammed Hariz: Cooperative Applications for Vehicular Social Network

### **Interns and FYP (Final Year Project)**

Duties include designing system and providing instructions for implementation.

- Dung Nguyen: Jiku director: a Mobile Video Mashup System
- Tarun Atrey: Adaptive Background modeling for Multimedia Surveillance Systems

## PUBLICATIONS

### Selected Journals Published

1. Alzamzami, F., Saini, M., & El Saddik, A. DST: days spent together using soft sensory information on OSNs—a case study on Facebook. **Springer Journal of Soft Computing**, 1-12, 2016. [**Impact Factor 1.6**]
2. Saini, M. & Saddik, A. E. **Absence Privacy Loss**. *IEEE Computer*, 48.11, 102-105, 2015. [**Impact Factor 1.43**].
3. Saini, M. & Saddik, A. E. How Close Are We To Realizing a Pragmatic VANET Solution? A Meta-Survey. **ACM Computing Surveys (ACM CSUR)**, 48(2), 29, 2015. [**Impact Factor 4.04**].
4. Saini, M., Alam, K. M., Guo, H., Alelaiwi, A., & Saddik, A. E. InCloud: A Cloud-based Middleware for Infotainment Systems Over VANETs. **Springer Multimedia Tools and Applications (MTAP)**, 1-29, 2016. [**Impact Factor 1.05**].
5. Bhardwaj, S., Saini, M., Atrey, P. K., & Saddik, A. E. Personality Detection Using Multiple Online Social Networks. **Springer Multimedia Tools and Applications (MTAP)**, 2014. [**Impact Factor 1.05**].
6. Alam, K. M., Saini, M. & Saddik, A. E. Towards Machine-to-Machine Social Network for the Internet of Vehicles. **IEEE Access**, 3,343-357, 2015. [**Impact Factor 1.2**]. [**Recognized as one in top 10 most popular journal papers in May 2015**]
7. Alam, K. M., Saini, M. & Saddik, A. E. Towards Workload Model Based Dynamic Adaptation of Social Internet of Vehicles. *Sensors*, 2015, [**Impact Factor 2.4**].
8. Mahapatra, D., Gilani, S., & Saini, M.. Coherency Based Spatio-Temporal Saliency Detection For Video Object Segmentation. **IEEE Journal of Selected Topics in Signal Processing (IEEE JSTSP)**, 8(3), 454-462, 2014 [**Impact Factor 3.63**].
9. Saini, M., Wang, X., Atrey, P. K., & Kankanhalli, M. Adaptive Workload Equalization in Multi-Camera Surveillance Systems. **IEEE Transactions on Multimedia (IEEE TMM)**, 14(3), 555-562, 2012 [**Impact Factor 1.76**].
10. Saini, M., Atrey, P. K., Mehrotra, S., & Kankanhalli, M. W3-privacy: Understanding What, When, and Where Inference Channels in Multi-Camera Surveillance Video. **Springer Journal on Multimedia Tools and Applications (MTAP)**, 68(1), 135-158, 2014 [**Impact Factor 1.05**].
11. Saini, M., Atrey, P. K. Atrey, S. Mehrotra and M. S. Kankanhalli. Considering Implicit Channels in Privacy Analysis of Video Data. **IEEE COMSOC MMTC E-letter**, Vol. 6, No. 11, (pp 27-30), 2011.

### Under Review/Preparation

12. Saini, M., Guthier, B., Hao, K., Mahapatra, D., & Saddik, A. E. SSA: Smart Surveillance Assistant for Monitoring on Mobile Devices. **IEEE Transactions on Circuits and Systems for Video Technology**. 2015 [**Impact Factor 2.6**].
13. Al-Zamzami, F., Saini, M., & Saddik, A. E. DST: Days Spent Together using Soft-Sensory Information on OSNs. A Case Study on Facebook, **Springer Journal on Soft Computing**, 2015 [**Impact Factor 1.3**].
14. Saini, M., Danesh, A. A., & Saddik, A. E. Towards Playback Device Recommendation. *IEEE Multimedia Magazine*, 2015 [**Impact Factor 1.76**].

## Peer Reviewed Book Chapters

1. Mahapatra, D. & Saini, M. A Particle Filter Framework for Object Tracking Using Visual-Saliency Information. In Intelligent Multimedia Surveillance, **Springer**, (pp. 133-147), 2013.
2. Saini, M., Atrey, P., & Kankanhalli, M. Workload Modeling for Multimedia Surveillance Systems. In Emerging Paradigms in Machine Learning. **Springer**, 2011.

## Conferences and Workshops

1. Saini, M., & Saddik, A. E. Multimedia Fatigue Detection for Adaptive Infotainment User Interface. In 2nd Workshop on Computational Models of Social Interactions: Human-Computer-Media Communication in Conjunction with 23rd ACM International Conference on Multimedia (**ACM MM**), (pp. 15-24), 2015.
2. Danesh, A. A., Saini, M., & Saddik, A. E. A Proxemic Multimedia Interaction over the Internet of Things. In The 21st MultiMedia Modelling Conference (**MMM2015**), (pp. 1-12), 2014.
3. Saini, M., Al-Zamzami, F., & Saddik, A. E. Towards Storytelling by Extracting Social Information from OSN Photos' Metadata. In First International Workshop on Internet-Scale Multimedia Management in Conjunction with 22nd ACM International Conference on Multimedia (**ACM MM**), (pp. 15-20), 2014.
4. Hao, K., Guthier, B., Saini, M., Mahapatra, D., & Saddik, A. E. A Real-Time Smart Assistant for Video Surveillance Through Handheld Devices. In 22nd ACM International Conference on Multimedia (**ACM MM**), (pp. 917-920), 2014.
5. Alam, K. M., Saini, M. & Saddik, A. E. tNote : A Social Network of Vehicles under Internet of Things. In **Springer** International Conference on Internet of Vehicles (IOV 2014), (pp.227–236), 2014 **Best Paper**.
6. Alam, K. M., Saini, M. & Saddik, A. E. VeDi: A Vehicular Crowd-sourced Video Social Network for VANETs. In **IEEE** LCN Workshop On User MObility and Vehicular Networks (ON-MOVE 2014), (pp. 738-745), 2014.
7. Bhardwaj, S., Saini, M., Atrey, P. K., & Saddik, A. E. Personalized Ambient Environments Using Multiple Social Networks. In 2nd **IEEE** International Workshop on Ambient Multimedia and Sensory Environment, in Conjunction with IEEE International Conference on Multimedia and Expo (ICME), 2014.
8. Nguyen, D. T. D., Saini M., Nguyen, V. T., & Ooi, W. T. Jiku Director: a Mobile Video Mashup System. In Proceedings of the 21st ACM international conference on Multimedia (**ACM MM**) (pp. 477-478), 2013 **Best Demo Paper**.
9. Saini M., Venkatagiri, S. P., Ooi, W. T., & Chan, M. C. The Jiku Mobile Video Dataset. In Proceedings of the 4th ACM Multimedia Systems Conference (**ACM MMSys**) (pp. 108-113), 2013.
10. Saini, M., Gadde, R., Yan, S., & Ooi, W. T. MoViMash: Online Mobile Video Mashup. In Proceedings of the 20th ACM International Conference on Multimedia (**ACM MM**) (pp. 139-148), 2012.
11. Shafiei, A., Ngo, Q. M. K., Guntur, R., Saini, M., Pang, C., & Ooi, W. T. Jiku Live: a Live Zoomable Video Streaming System. In Proceedings of the 20th ACM International Conference on Multimedia (**ACM MM**) (pp. 1265-1266), 2012.
12. Saini, M., Atrey, P., Mehrotra, S., & Kankanhalli, M. Anonymous surveillance. In **IEEE** International Conference on Multimedia and Expo (**IEEE ICME**), (pp. 1-6), 2011.
13. Saini, M., Xiangyu, W., Atrey, P., & Kankanhalli, M. Dynamic workload assignment in video surveillance systems. In IEEE International Conference on Multimedia and Expo (**IEEE ICME**), (pp. 1-6), 2011.

14. Saini, M., Atrey, P., Emmanuel, S., & Kankanhalli, M. Functionality Delegation in Distributed Surveillance Systems. In IEEE International Workshop on Multimedia Systems for Surveillance in conjunction with IEEE International Conference on Advanced Video and Signal-Based Surveillance (**IEEE AVSS**). Boston, USA. (pp.72-79), 2010.
15. Saini, M., Atrey, P., Mehrotra, S., Emmanuel, S., & Kankanhalli, M. Privacy Modeling for Video Data Publication. In IEEE International Conference on Multimedia and Expo (**IEEE ICME**), (pp.60-65), 2010.
16. Saini, M., Nataraj , Y., & Kankanhalli, M. Performance Modeling of Multimedia Surveillance Systems. In IEEE International Symposium on Multimedia (**IEEE ISM**), (pp.179-186), 2009.
17. Saini, M., Jain, R.; & Kankanhalli, M. A Flexible Surveillance System Architecture. In International Conference on Advanced Video and Signal Based Surveillance (**IEEE AVSS**), (pp.571-576), 2009.
18. Saini, M., & Kankanhalli, M. Context-Based Multimedia Sensor Selection Method. In IEEE International Conference on Advanced Video and Signal Based Surveillance (**IEEE AVSS**), (pp.262-267), 2009.
19. Saini, M. Singh, V., Jain, R., & Kankanhalli, M. Multimodal Observation Systems. In ACM International Conference on Multimedia (**ACM MM**), (pp.933-936), 2008.
20. Mahapatra, D., Saini, M., & Ying S. Illumination invariant tracking in office environments using neurobiology-saliency based particle filter. In IEEE International Conference on Multimedia and Expo (**IEEE ICME**) (pp.953-956), 2008.

INVITED PANELIST [1] Future Challenge Evaluation, John Garofolo - NIST (USA). Panel: J. Ferryman - University of Reading, G. Doretto - GE Global Research, M. Saini - National University of Singapore, F. Bremond INRIA. In IEEE International Conference on Video and Signal Based Surveillance. Genoa, Italy. 2009

PROGRAM  
COMMITTEE  
MEMBER

- The 22nd International Conference on Multimedia (ACM MM 2014) in Florida, USA, November 2014.
- The 15th Annual Pacific-Rim Conference on Multimedia (PCM 2014) in Kuching, Sarawak, Malaysia.
- The 22nd International Conference on Pattern Recognition (ICPR 2014) in Stockholm, Sweden, 24-28th August 2014.
- The 20th Anniversary International Conference on Multi Media Modeling (MMM 2014) Dublin, Ireland, 6-10th January 2014.
- AAMS-PS 2012 in conjunction with IEEE International Conference on Multimedia and Expo (ICME 2012), Melbourne, Australia, July 9-13, 2012.
- The 7th International Symposium on Wireless sensor network Technologies and Applications for Smart Space (WTA 2011) Jeju, Korea, December 12-15, 2011.

REVIEWER

- IEEE Transactions on Multimedia (TMM).
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT).
- IEEE Transactions on Information Forensics & Security (TIFS).
- IEEE Journal of Selected Topics in Signal Processing (JSTSP).
- ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOM-CCAP).
- Springer International Journal of Multimedia Tools and Applications (MTAP).
- Springer Multimedia Systems Journal (MMSJ).

- Electronics and Telecommunications Research Institute (ETRI).
- Security and Communication Networks (SCN).
- ACM International Conference on Multimedia (ACM MM).
- And more conferences and workshops.

HOBBIES

Volleyball, Badminton, Dancing, Aerobics, Swimming, Mountaineering

REFEREES

- **Mohan Kankanhalli**, Prof., National University of Singapore, Singapore  
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- **Abdulmotaleb El Saddik**, Prof., University of Ottawa, Ottawa  
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- **Wei Tsang Ooi**, Assoc. Prof, National University of Singapore, Singapore  
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- **Pradeep Atrey**, Assist. Prof, State University of New York at Albany, New York  
**Address:** LI 096C, 1400 Washington Avenue, Department of Computer Science, State University of New York at Albany, Albany, NY 12222. **Phone:** 518-442-4276.  
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- **Sharad Mehrotra**, Prof., University of California at Irvine, Irvine  
**Address:** 2082 Bren Hall, University of California at Irvine, Irvine, CA 92697-3425, USA. **Phone:** (1) 949-824-5975. **Fax:** (1) 949-824-4056.  
*Homepage:* <http://www.ics.uci.edu/~sharad/>. *Email:* [sharad@ics.uci.edu](mailto:sharad@ics.uci.edu)
- **Ramesh Jain**, Prof., University of California at Irvine, Irvine  
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