# Sakire ARSLAN AY, Ph.D.

Clinical Associate Professor
School of Electrical Engineering and Computer Science (EECS)
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## EDUCATION BACKGROUND:

**08/2004 – 12/2010**  **Ph.D. Degree in Computer Science**          **GPA: 3.96 / 4.0.**
University of Southern California (USC), Los Angeles, CA, 90089 USA
- Dissertation Title: "Leveraging Georeferenced Meta-Data for the Management of Large Video Collections"
- Advisor: Prof. Roger Zimmermann (*now at* National University of Singapore)
- Co-Advisor: Prof. Cyrus Shahabi (University of Southern California)

**02/2002 – 05/2005**  **M.S. Degree in Computer Science**          **GPA: 4.0 / 4.0.**
University of Southern California (USC), Los Angeles, CA, 90089 USA
- Advisor: Prof. Roger Zimmermann (*now at* National University of Singapore)

**09/1994 – 06/1999**  **B.S. Degree in Computer Science**          **GPA: 3.01 / 4.0.**
Bogazici University (BU), Istanbul  TURKEY

## WORK EXPERIENCE:

**08/2018 – present**  **Clinical Associate Professor,** School of Electrical Engineering and Computer Science
Washington State University (WSU), Pullman, WA 99163          USA

**01/2013 – 08/2018**  **Clinical Assistant Professor,** School of Electrical Engineering and Computer Science
Washington State University (WSU), Pullman, WA 99163          USA

**01/2013 – 01/2017**  **Assistant Director,** School of Electrical Engineering and Computer Science
Washington State University (WSU), Pullman, WA 99163          USA

**08/2012 – 12/2012**  **Adjunct Faculty,** School of Electrical Engineering and Computer Science
Washington State University (WSU), Pullman, WA 99163          USA

**10/2010 – 08/2011**  **Postdoctoral Research Fellow,** Department of Computer Science
National University of Singapore (NUS),                    Singapore
*Supervisor:* Roger Zimmermann

**01/2009 – 06/2009**  **Research Intern,** Department of Computer Science
National University of Singapore (NUS),                    Singapore
*Supervisor:* Roger Zimmermann

**08/2008 – 12/2008**  **Adjunct Faculty,** Department of Computer Science
University of Idaho (UI), Moscow, ID 83844          USA

**08/2004 – 01/2009**  **Graduate Research Assistant,** Integrated Media Systems Center (IMSC)
University of Southern California (USC), Los Angeles, CA, 90089          USA

**06/1998 – 01/2001**  **Database Administrator/Software Engineer**
BELBIM A.S., Istanbul                    TURKEY

TEACHING EXPERIENCE:

*Courses taught at Washington State University (WSU), Pullman, WA  USA*
**CptS 322 – Software Engineering Principles I**     (Fall 2017, Fall 2018, Fall 2019, Fall2020)
– Junior level class with average 95 students per semester; required for CS/SE majors. 3 TAs managed.
**CptS 355 – Programming Language Design**     (Fall 2016, Spring 2017, Spring 2018, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020)
– Junior level class with average 160 students per semester; required for CS/SE majors. 8 TAs managed.
**CptS 421 – Software Design Project I**    (Fall 2012, Fall 2013, Fall 2014, Fall 2015)
– Senior Capstone class, taken by 25 to 55 students per semester; solicited and managed more than 10 industry sponsored projects per semester.
**CptS 423 – Software Design Project II**    (Spring 2013, Spring 2014, Spring 2015, Spring 2016)
– Senior Capstone class, taken by 25 to 55 students per semester; solicited and managed more than 10 industry sponsored projects per semester.
**CptS 451 – Introduction to Database Systems**  (Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Summer 2020)
– Technical elective class, taken by 126 students per semester; designed and managed more than 45 projects per semester. 3 TAs managed.
**CptS 323 – Software Design**   (Spring 2013)
– Junior level class with average 60 students per semester; required for CS major; 2 TAs managed.

*Courses taught at University of Idaho (UI), Computer Science Department, Moscow, ID  USA*
**CS 385/MATH 385 – Theory of Computation**   (Fall 2008)
– Junior level class with average 30 students per semester; co-listed with Mathematics department; required for CS major; no TA support.

RESEARCH INTERESTS:

- Sensor-Rich Video Annotation and Search
- Large-Scale Geospatial Data Management and Indexing
- Mobile Video Management
- Spatio-Temporal Data Mining

PUBLICATIONS:      *Google Scholar h-index: (all) 11 /  i10-index: (all) 11*
*Citations: 517*

Dissertation       ***Sakire Arslan Ay***, "*Leveraging Georeferenced Meta-Data for the Management of Large Video Collections*" USC, Los Angeles, CA USA, 12/2010.

Journals       1.   Ma He, ***Sakire Arslan Ay***, Roger Zimmermann, and Seon Ho Kim, "*Large-scale Geo-tagged Video Indexing and Queries,*" Geoinformatica, Volume18, Issue 4, pp. 671-697, October ***2014***.

2.   Seon Ho Kim, ***Sakire Arslan Ay***, and Roger Zimmermann, "*A Design and Implementation of Geo-Tagged Video Search Framework,*" Journal of Visual Communications and Image Representation (JVCI): Special Issue on Large Scale Image and Video Search, Volume 21, Issue 8, pp. 773-786, Elsevier, November ***2010.***

3.   ***Sakire Arslan Ay***, Roger Zimmermann, and Seon Ho Kim, "*Relevance Ranking in Georeferenced Video Search,*" Multimedia Systems Journal, Volume 16, No. 2, pp. 105-125, Springer, March ***2010.***

4.   Roger Zimmermann, Elaine Chew, ***Sakire Arslan Ay*** , and Moses Pawar, "*Distributed Musical Performances: Architecture and Stream Management,*" ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP), Volume 4, Issue 2, pp. 14:1-14:23, May ***2008.***

| | |
|---|---|
| Conference | 1. Kavita Shashank, ***Sakire Arslan Ay***, Ankit Phulzale, R.C. Ram, Huan Hu, and Subhanshu Gupta, "Precise Placement of Precordial Electrodes with +/−0.5 cm Accuracy for Recording ECG in Self-operable Diagnostic Devices", To appear in Proceedings of the Advances in Human Factors and Ergonomics in Healthcare and Medical Devices (AHFE) Conference, July **2017**. |

2. Matthew E. Taylor and ***Sakire Arslan Ay***. AI Projects for Computer Science Capstone Classes (Extended Abstract). In Proceedings of the Seventh Symposium on Educational Advances in Artificial Intelligence, February **2017**.

2. Ruofei Xu, Robin Hartshorn, Ryan Huard, James Irwin, Kaitlyn Johnson, Gregory Nelson, Jon Campbell, ***Sakire Arslan Ay***, and Matthew E. Taylor. Towards a Semi-Autonomous Wheelchair for Users with ALS. In Proceedings of Workshop on Autonomous Mobile Service Robots (at IJCAI), New York City, NY, USA, July **2016**.

3. Ma He, ***Sakire Arslan Ay***, Roger Zimmermann, and Seon Ho Kim "A Grid-based Index and Queries for Large-scale Geo-tagged Video Collections," in Spatial Information Modeling, Management and Mining (SIMMM 2012), pp 216-228, April ***2012***.

4. Zhijie Shen, ***Sakire Arslan Ay***, Roger Zimmermann, and Seon Ho Kim "SRV-TAGS: An Automatic Tagging and Search System for Sensor Rich Outdoor Videos," in the proc. of the ACM Multimedia Conference (ACM MM 2011), pp. 761-762, Oct. ***2011***.

5. Zhijie Shen, ***Sakire Arslan Ay***, Roger Zimmermann, and Seon Ho Kim "Automatic Tag Generation and Ranking for Sensor-rich Outdoor Videos," in the proceedings of the ACM Multimedia Conference (ACM MM 2011), pp. 93-102, October ***2011***.

6. Hao Jia, Guanfeng Wang, Roger Zimmermann, Seon Ho Kim, and ***Sakire Arslan Ay***, "Energy-Efficient Mobile Video Management using Smartphones," in the proceedings of the ACM Multimedia Systems Conference (ACM MMSys 2011), pp. 11-22, Feb. ***2011***.

7. ***Sakire Arslan Ay***, Seon Ho Kim, and Roger Zimmermann, "Generating Synthetic Meta-data for Georeferenced Video Management," in the proceedings of the ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS 2010), pp. 280-289, November ***2010***.

8. Seon Ho Kim, ***Sakire Arslan Ay***, Byunggu Yu, and Roger Zimmermann, "Vector Model in Support of Versatile Georeferenced Video Search," in the proceedings of the ACM Multimedia Systems Conference (ACM MMSys 2010), pp. 235-246, February ***2010***.

9. ***Sakire Arslan Ay***, Lingyan Zhang, Seon Ho Kim, Ma He, and Roger Zimmermann, "GRVS: A Georeferenced Video Search Engine," in the proceedings of the ACM Multimedia Conference (ACM MM 2009), pp. 977-978, October ***2009***.

10. ***Sakire Arslan Ay***, Roger Zimmermann and Seon Ho Kim, ''Viewable Scene Modeling for Geospatial Video Search ,'' in the proceedings of the ACM Multimedia Conference (ACM MM 2008), pp. 309-318, October ***2008***.

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| Abstracts, Posters | ***Sakire Arslan Ay***, Jon Clements, Huong T. D. Doan, Luke L. Darrow, David B. Hoekman, Mackenzie M. Meade, Kavita Gupta, Subhanshu Gupta, "Self-assisted 12-lead ECG Sensor Placement using RGB-D Sensors in Microsoft Kinect", 2016 BMES/FDA Frontiers in Medical Devices Conference, May **2016**. |
| Patents | Roger Zimmermann, Seon Ho Kim, ***Sakire Arslan Ay***, Beomjoo Seo, Zhijie Shen, Guanfeng Wang, Jia Hao, Ying Zhang "Apparatus, System, and Method for Annotation of Media Files with Sensor Data," US Patent App. 14/000,846, date :02/21/***2012***. |

| Reports | He Ma, *Sakire Arslan Ay*, Roger Zimmermann, Seon Ho Kim, "Metadata Organization and Query Optimization for Large-scale Geo-tagged Video Collections, " NUS/SoC Technical Report TR10/11, National University of Singapore, October *2011*. |

## GRANTS and DONATIONS:

| Grants | |
|---|---|
| | 1. *Sakire Arslan Ay (PI),* Matthew Riley (Co-PI, at University of Idaho), "RoboSub Autonomous Underwater Vehicle (AUV)", AUVSI Student AUV Competition Grant – CS (NAVSEA Keyport, WA) total budget of **$30,000**, 08/30/2012 – 05/15/2016. |
| | 2. *Sakire Arslan Ay (PI),* "Highly Scalable TFTP and SFTP Server," EMC Isilon Senior Design Project Grant, with budget of **$10,000**, 08/30/2014 – 05/15/2015. |
| | 3. *Sakire Arslan Ay (PI),* "Custom Ambari Viewer for Isilon Onefs," EMC Isilon Senior Design Project Grant, with budget of **$10,000**, 08/30/2015 – 05/15/2016. |
| Donations | WSU Team Gleason Fundraising for "Creating Technologies for People with ALS", worked with WSU Foundation staff to raise total **$26,000**, to be used by Senior Design teams that I was mentoring, 08/30/2014 – 05/15/2015. |

## STUDENTS SUPERVISED:

| Graduate | Students I supervised that resulted in referred publications | |
|---|---|---|
| | 1. Zhijie Shen, National University of Singapore, PhD Student, | 2009 – 2010 |
| | 2. Ma He, National University of Singapore, PhD Student, | 2010 – 2011 |
| | 3. Hao Jia, National University of Singapore, PhD Student, | 2009 – 2010 |

| Undergraduate | Students I supervised for undergraduate independent study | |
|---|---|---|
| | 1. Harrison Greenlee, EECS, Washington State University, | 01/2021 – present |
| | 2. Tyler Walker, EECS, Washington State University, | 08/2015 – 12/2015 |
| | 3. Jacob Wall, EECS, Washington State University, | 08/2014 – 12/2014 |
| | 4. Daniel Ekiss, EECS, Washington State University, | 08/2014 – 12/2014 |
| | 5. Mitchell Scanlan, EECS, Washington State University, | 08/2014 – 12/2014 |
| | 6. Joel Wadagnolo, EECS, Washington State University, | 08/2013 – 12/2013 |
| | 7. David Hawbaker, EECS, Washington State University, | 01/2013 – 05/2013 |

## PROFFESIONNAL SERVICES:

| National | **WSU Faculty Representative** for NCWIT<br>National Center for Women & Information Technology (NCWIT) | 08/2015 – present |
|---|---|---|
| State Level | **Participating Member and Representative** of EECS & WSU<br>Washington State Computer Science Direct Transfer Agreement (DTA)<br>Major Related Program (MRP) Development Workgroup. | 02/2015 – 12/2016 |
| School Level | 1. **Coordinator**, WSU Software Engineering BS and<br>Online Software Engineering MS Programs | 01/2017 – present |
| | 2. **Member**, Computer Science and Software Engineering<br>Curriculum Committee, School of EECS, WSU | 02/2017 – present |
| | 3. **Member**, Computer Science and Software Engineering<br>ABET Assessment Committee, School of EECS, WSU | 02/2017 – present |
| | 4. **Faculty advisor** for WSU's ACM-W Student Chapter<br>(ACM's Women in Computing) | 03/2015 – present |
| | 5. **Member**, Computer Science Education Initiatives Committee<br>School of EECS, WSU<br>Leading female student retention efforts | 06/2015 – 12/2016 |

| Reviewer | 1. ACM Multimedia Conference | 2008 – 2010 |
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| | 2. International Conference on Cooperative Information Systems (CoopIS) | 2008 – 2009 |
| | 3. IEEE Transactions on Multimedia | 2016 |
| | 4. ISPRS International Journal of Geo-Information | 2016 – 2020 |

AWARDS AND DISCTINCTIONS:

2019: **The Reid Miller Excellence in Teaching Award**, Voiland College of Engineering & Architecture, Washington State University (WSU), Pullman, WA  USA

2019: **Outstanding Teacher Award**, School of Electrical Engineering and Computer Science (EECS), Washington State University (WSU), Pullman, WA  USA

2018: **Outstanding Teacher Award**, School of Electrical Engineering and Computer Science (EECS), Washington State University (WSU), Pullman, WA  USA

2005: **Outstanding Academic Achievement Award**, Office of International Services, University of Southern California (USC), Los Angeles, CA  USA

AFFILIATIONS:     Member of ACM                                        2008 – present

REFERENCES:      Available upon request.