

Dr-Ing. Ragaad AlTarawneh, Ph.D.

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ACADEMIC QUALIFICATION:

- 04/2010 – 07/2015 **PhD in Computer Engineering (Dr.-Ing.)**
Computer Graphics and HCI Group, Department of Computer Science
University of Kaiserslautern, Germany
(Link: <http://hci.uni-kl.de/>)
Thesis Title: “Interactive Visual Support for Understanding the Structural and Behavioural Aspects of Embedded Systems”
Supervisors: Prof. Achim Ebert, Prof. Peter Liggesmeyer
Research Topics in PhD: Information Visualization, Graph Visualization, Software Visualizations, Stereoscopic Visualization, 3D Displays, Human-Computer Interaction (HCI), Usability Engineering, Embedded Systems, and Computer Science Education.
- 10/2005 – 07/2007 **MSc in Computer Science** [with Honor Degree, 3.88 out of 4.00 GDP]
Department of Computer Science, University of Jordan, Jordan
Thesis Title: “Using Genetic Solution for Manet Mobility-based Clustering Algorithms”
Supervisor: Dr. Wesam Al Mobaideen
Topics: Networks, Networks Management, Object-Oriented Design, Database Management, Distributed Operating Systems, Formal Specifications, Computer Architectures, Natural Languages Processing.
- 10/2001 – 09/2004 **Bachelor Degree in Computer Science**
Mutah University, Jordan
[Finished the Degree of 4 years in 3 years only, (82.7 out 100 GDP)]

RESEARCH INTERESTS:

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|----------------------------------|-----------------------------|----------------------------------|
| <i>Cloud Computing</i> | - Visual Data Management | |
| | - Streaming Data Management | |
| | - Cloud System Engineering | |
| <i>Information Visualization</i> | - Graphs Visualization | - Spatial Data Visualization |
| | - Visual User Interfaces | - Non-Spatial Data Visualization |

Human-Computer Interaction

- Virtual Reality
 - Visual Design
 - Software Visualization
 - Interaction and Navigation
 - User Evaluation studies
 - User-Centred Design (UCD) environments
- Compound Graphs Visualization
 - Visualization for Large Displays
 - 3D Visualization
 - Stereoscopic Depth-based visualization
 - Human factors engineering
 - Collaborative interactive environments

Software Engineering

- Safety Analysis
- Software Metrics Analysis
- Software Systems Analysis

WORKING EXPERIENCE

05/01/2017 - Present

- **Research Scientist**
Intel Labs, Intel Corporation
Hillsboro, Oregon, USA

12/01/2015 – 04/30/2017

- **Assistant Professor**
Department of Computer and Systems Engineering
Mutah University, Jordan.

07/04/2015 – 09/30/2015

- **Research Assistant**
Computer Graphics and HCI Group
University of Kaiserslautern, Germany
Scientific In-charge: Prof. Achim Ebert & Prof. Hans Hagen

Main responsibilities:

Coordinating in courses teaching, *working on projects, supervising with master and bachelor students for their seminar and final theses.*

04/20/2015 – 07/10/2015

- **Intern at Intel Labs (Data Visualization Group)**
Intel Labs, Intel Corporation
Hillsboro, Oregon, USA

Research Areas:

Parallel computing and high performance technology for visualizing big data.

10/2010 – 03/31/2015

- **Research Assistant**
Computer Graphics and HCI Group
University of Kaiserslautern, Germany
Scientific In-charge: Prof. Achim Ebert & Prof. Hans Hagen

Main responsibilities:

Coordinating in courses teaching, *working on projects, supervising with master and bachelor students for their seminar and final theses.*

Projects:

1. **“VIER4ES2 - Virtual and Augmented Reality for Maximum Safety and Reliability of Embedded Systems”**. Involvement in this project was at different stages especially for performing system and usability evaluation. Our main collaborations were with Fraunhofer IESE, Robotics Research Lab at University of Kaiserslautern, and Software Engineering: Dependability Group at University of Kaiserslautern.

2. **“UID4Mobile - Scalable User Interface Design for Mobile Applications”** This project was in collaboration with Fraunhofer IESE. The theme of this project was to investigate and build approaches, techniques, frameworks, and tools to help the interaction designers in designing and building scalable mobile apps user interfaces. My involvement was in the evolution of mobile prototypes through genetic algorithms.

Teaching Activities:

- 1) **Introduction to Information Visualization and Visual Analytics** (Summer Semester 2014, 2015)
 - Giving parts of lectures and conducting exercises.
- 2) **Human-Computer Interaction** Winter semester 2014/2015
 - Conducting exercises
- 3) **Information Visualization, Visual Analytics, and Human-Computer Interaction** (Summer School)
 - 2-days summer school at Universidad de los Andes, Bogota, Colombia, July 02-03, 2014
 - 2-days summer school at Universidad Industrial de Santander, Bucaramanga Colombia, July 07-08, 2014

Master Theses Supervision:

- Manal AlKhoshman “Toward Visualizing Educational Mobile Apps for Children in Jordan”
 - Aamir Islam “Visual Analytical Support for Open Public Transportation Data in Rhineland-Palatinate”
 - Hafiz Aziza “Interactive Visualization of Complex Social Networks”
 - Sujay Muramalla “ Perception of Hierarchical Layouts”
 - Abdel-Karim Al-Ja’afreh “Visualizing Software Structures of Embedded Systems” (2014)
 - Razan Jaber Ibraheem “Evaluation of Interactive Collaborative Environment” (2015)
 - Ramya Nischala Akula “Tool for Visualization of Complex Social Networks” (2015)
- 10/2007 – 07/2009
- **Lecturer and Research Assistant**
Department of Computer and Systems Engineering, Mutah University, Jordan.
- 11/2006 – 10/2007
- **Programmer**
Ministry of Agriculture, Government of Jordan, Jordan.
- 10/2004 – 01/2005
- **Teacher**
Ministry of Education, Government of Jordan, Jordan.

ACHIEVEMENTS

- Best Paper award in SIG-RAD 2014 conference
- Best Paper award in PID-MAD 2013 workshop
- Over 25 peer-reviewed scientific articles in international journals, conferences, and workshops
- Worked as a Student Volunteer in 7 international workshops
- Jordan Military scholarship for Distinct Students in Jordan (Bachelor study)
- King Abdullah II Scholarship for Distinct Students (Master

Study cost)

- Mutah University Scholarship (To support partially PhD studies)
- DFG scholarships from Germany (To support partially PhD studies)

MEMBERSHIPS

- Student member of the Association for Computer Machinery (ACM)

LANGUAGES

- English
- Arabic
- German

RESEARCH ACTIVITIES:

Organizing Workshops/Conferences

- In the Program Committee of the IFIP WG 13.7 Workshop on Designing Interaction and Visualization for Mobile Applications (DIViM 2015) (<http://hciv.de/divim15/>), September 14, 2015, Bamberg, Germany.
- In the Program Committee of the IEEE and ifip 2nd International Workshop on Usability and Accessibility focused Requirements Engineering [UsARE 2014] (<http://hciv.de/usare14/>), August 26, 2014, Karlskrona, Sweden.

- Reviewing

- 1) ACM VRST 2016
- 2) ACM CHI Play 2016
- 3) ACM ISS 2016
- 4) ACM IDC 2015
- 5) ACM EICS 2015
- 6) ACM CHI 2015
- 7) ACM IUI 2015, 2016
- 8) ACM MOBILESoft 2015
- 9) DIViM 2015
- 10) IEEE UsARE 2014
- 11) PID-MAD 2013 workshop at MobileHCI 2013

- Student Volunteer

- 1) Ifip INTERACT 2015
- 2) IEEE VR 2015
- 3) IEEE VIS 2014
- 4) IEEE RE 2014
- 5) ACM IUI 2014
- 6) Meeting C++ 2014
- 7) IEEE VIS 2013

RESEARCH PUBLICATIONS

*Journal Publications
(peer-reviewed)*

1. Sujay Muramalla, **Ragaad AITarawneh**, Shah Rukh Humayoun, Ricarda Moses, Sven Panis, and Achim Ebert. Radial vs. Rectangular: Evaluating Visualization Layout Impact on User Task Performance of Hierarchical Data. International Journal of Computer Science and Information Security (IJCSIS), Vol. 12, issue. 2, pp. 17-31, ISSN: 1646-3692, Dec. 2017.
2. **Ragaad AITarawneh** and Shah Rukh Humayoun. "Evolving Mobile Prototypes Towards The Best-suited Design and Interaction Schema Using The Genetic Algorithm". In International Journal of Mobile Human Computer Interaction (IJMHCI), 6(2), pp. 1-10, 2014.

Book Chapters
(peer-reviewed)

3. **Ragaad AlTarawneh**, Max Steiner, Davide Taibi, Shah Rukh Humayoun, and Peter Liggesmeyer. “Does Visualization Speed up the Safety Analysis Process?”. Computer Safety, Reliability, and Security Lecture Notes in Computer Science Volume 8696, Springer, pp. 431-443, 2014. Paper presented in the 3rd Workshop on Next Generation of System Assurance Approaches for Safety-Critical Systems (SASSUR 2014) held in conjunction with the 33rd International Conference on Computer Safety, Reliability and Security (SafeComp 2014) on September 10-12, Florence, Italy, 2014.

4. **Ragaad AlTarawneh**, Jens Bauer, Shah Rukh Humayoun, Patric Keller, Achim Ebert. “The Reflection Layer Extension to the Stereoscopic Highlight Technique for Node-Link Diagrams: An Empirical Study”. Presented at ISVC '13, Advances in Visual Computing, Lecture Notes in Computer Science, Springer, v. 8034, pp 1-12, 2013.

5. **Ragaad AlTarawneh**, Patric Keller, and Achim Ebert. “A General Introduction To Graph Visualization Techniques”. In Proceedings of the IRTG 1131 Workshop 2011, OASICS, Vol. 27, VLUDS 2011, June 10-11, 2011, Kaiserslautern, Germany.

Conferences
(peer-reviewed)

6. Shah Rukh Humayoun, Syed Moiz Hasan, **Ragaad AlTarawneh** and Achim Ebert. *Visualizing Software Hierarchy and Metrics Over Releases*. International Working Conference on Advanced Visual Interfaces (AVI 2018), ACM, 29 May – 1 June, 2018.

7. Shah Rukh Humayoun, Kritika Bhambri, and **Ragaad AlTarawneh**. *BiD-Chord: An Extended Chord Diagram for Showing Relations between Bi-Categorical Dimensional Data*. International Working Conference on Advanced Visual Interfaces (AVI 2018), ACM, 29 May – 1 June, 2018.

8. Ghazanfer Abbas, Shah Rukh Humayoun, **Ragaad AlTarawneh**, Achim Ebert. *Simple Shape-based Touch Behavioral Biometrics Authentication for Smart Mobiles*. International Working Conference on Advanced Visual Interfaces (AVI 2018), ACM, 29 May – 1 June, 2018.

9. Shah Rukh Humayoun, Saman Ardalan, **Ragaad AlTarawneh**, and Achim Ebert. *TExVis: An Interactive Visual Tool to Explore Twitter Data*. In 19th EG/VGTC Conference on Visualization (EuroVis 2017), Eurographics and EEE VGTC, Barcelona, 12-16 June, 2017.

10. Shah Rukh Humayoun, Syed Hammad Ali, **Ragaad AlTarawneh**, and Achim Ebert. *An Interactive Visual Representation to Explore Association with Hierarchical Social Circles*. In 19th EG/VGTC Conference on Visualization (EuroVis 2017), Eurographics and EEE VGTC, Barcelona, 12-16 June, 2017.

11. Ricarda Moses, Shah Rukh Humayoun, **Ragaad AlTarawneh**, and Achim Ebert. *Evaluating Cognitive Load: Force-directed Layout vs. Chord Layout*. In 19th EG/VGTC Conference on Visualization (EuroVis 2017), Eurographics and EEE VGTC, Barcelona, 12-16 June, 2017.

12. Shah Rukh Humayoun, Priya Rath, **Ragaad AlTarawneh** and Achim Ebert. *Understanding User Requirements and Expectations for Car/Ride Sharing Smartwatch Apps*. In 31st British Human Computer Interaction Conference (BCS-HCI 2017), University of Sunderland’s St. Peter’s Campus, July 3-6 2017.

13. **Ragaad AlTarawneh**, Ahmad Hassanat, Shah Rukh Humayoun and Manal Alkoshman. *The Story of Designing an Educational Mobile*

- Application for Children in South of Jordan*. In 31st British Human Computer Interaction Conference (BCS-HCI 2017), University of Sunderland's St. Peter's Campus, July 3-6 2017.
14. **Ragaad AITarawneh**, Shah Rukh Humayoun, and Achim Ebert. *Can We Interpret the Depth? Evaluating Variation in Stereoscopic Depth for Encoding Aspects of Non-Spatial Data*. In Proceedings of the 9th Nordic Conference on Human-Computer Interaction (NordiCHI '16), ACM, Article 14, 10 pages, 2016.
 15. Sujay Muramalla, **Ragaad AITarawneh**, Shah Rukh Humayoun, Ricarda Moses, and Achim Ebert. *Evaluating Sunburst and Icicle Space-Filling Techniques in Showing Large Hierarchical Data*. In Proceedings of the 13th International Conference on Applied Computing (AC 2016), 28 – 30 October, 2016, Mannheim, Germany.
 16. **Ragaad AITarawneh**, Shah Rukh Humayoun, Achim Ebert, and Peter Liggesmeyer. *“Improving the Failure Understanding in Embedded Systems through Interactive Visual Support: An Evaluation Study.”* In Proc. of the 30th British Human Computer Interaction Conference (BCS-HCI 2016), 11 – 15 July, 2016, Bournemouth, UK. (Accepted!)
 17. Shah Rukh Humayoun, Hafez Ezaiza, **Ragaad AITarawneh**, and Achim Ebert. *“Social-Circles Exploration through Interactive Multi-Layered Chord Layout.”* In the Proc. of International Working Conference on Advanced Visual Interfaces (AVI 2016), ACM, 314-315.
 18. **Ragaad AITarawneh** and Shah Rukh Humayoun. *“Visualizing Software Structures through Enhanced Interactive Sunburst Layout.”* In the Proc. of International Working Conference on Advanced Visual Interfaces (AVI 2016), ACM, 288-289.
 19. Hafez Ezaiza, Shah Rukh Humayoun, **Ragaad AITarawneh**, and Achim Ebert. *“PerSoN-Vis: Visualizing Personal Social Networks (Ego Networks).”* In 2016 ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'16 Extended Abstracts), San Jose, CA, USA, May 7-12, 2016.
 20. Shah Rukh Humayoun, Yael Dubinsky, and **Ragaad AITarawneh**. *“Using IoTGolog to Formalize IoT Scenarios.”* In 2015 IEEE 2nd World Forum on Internet of Things (IEEE WF-IoT 2015), IEEE, pp. 234–238, Dec. 14-16, 2015, Milan, Italy.
 21. Shah Rukh Humayoun, Jahanzeb Khan, Syed Moiz Hasan, **Ragaad AITarawneh**, and Achim Ebert. *“Hi-AppV: Viewing Tabletop Application Windows on Mobile Devices.”* In Proceedings of the ACM 10th International Conference on Interactive Tabletops and Surfaces (ITS 2015), ACM, pp. 271–276, 2015.
 22. Shah Rukh Humayoun, Mahmoud Sharf, **Ragaad AITarawneh**, Achim Ebert, and Tiziana Catarci. *“ViZCom: Viewing, Zooming and Commenting through Mobile Devices.”* In Proceedings of the ACM 10th International Conference on Interactive Tabletops and Surfaces (ITS 2015), ACM, pp. 331–336, 2015.
 23. **Ragaad AITarawneh**, Razan Jaber Ibraheem, Shah Rukh Humayoun, and Achim Ebert. *“Collaborative Position Patterns for Pairs Working with Shared Tiled-Wall Display using Mobile Devices.”* In Proceedings of the ACM 10th International Conference on Interactive Tabletops and Surfaces (ITS 2015), ACM, pp. 259–264, 2015.
 24. Aamir Islam, **Ragaad AITarawneh**, Shah Rukh Humayoun, Sascha Baron and Achim Ebert. *“ViQAP: Visualizing Quality Aspects of Public Transportation between Cities in a Region”* In Proc. of the IEEE 5th Symposium on Large Data Analysis and Visualization (LDAV 2015), Oct. 25-26, 2015. (To be appeared)
 25. **Ragaad AITarawneh**, Shah Rukh Humayoun, Johannes Schultz, Achim Ebert, and Peter Liggesmeyer. *“LayMan: A Visual*

Workshops
(peer-reviewed)

- Interactive Tool to Support Failure Analysis in Embedded Systems*". In the proceedings of the 9th European Conference on Software Architecture (ECSA 2015), Dubrovnik-Cavtat, Croatia, September 2015.
26. **Ragaad AITarawneh**, Shah Rukh Humayoun, and Achim Ebert. "A Hybrid Approach for Visualizing Spatial and Non-spatial Data Types of Embedded Systems". In the proceedings of J. Abascal et al. (Eds.): INTERACT 2015, Part IV, LNCS 9299, 2015.
 27. Ragaad AITarawneh, Shah Rukh Humayoun, and Achim Ebert. "Utilization of Variation in Stereoscopic Depth for Encoding Aspects of Non-spatial Data". In the proceedings of the IEEE 10th Symposium on 3D User Interfaces (3DUI 2015), March 23-24, 2014, Arles, France.
 28. **Ragaad AITarawneh**, Shah Rukh Humayoun, and Achim Ebert. "Expand: A Stereoscopic Expanding Technique for Compound Graphs". In 20th ACM Symposium on Virtual Reality Software Technology (VRST 2014), ACM, pp. 223--224, Edinburg, United Kingdom, November 11-13, 2014.
 29. Shah Rukh Humayoun, **Ragaad AITarawneh**, and Yael Dubinsky. "Formalizing User Interaction Requirements of Mobile Applications". In Proc. of the 28th British HCI Conference (BCS-HCI 2014), Southport, September 9-12, 2014.
 30. **Ragaad AITarawneh**, Max Langbein, Shah Rukh Humayoun, and Hans Hagen. "TopoLayout-DG: A Topological Feature-Based Framework for Visualizing Inside Behavior of Large Directed Graphs." In Proceedings of the 13th SIGRAD 2014 Conference of the Swedish Eurographics Chapter, Gothenburg, Sweden, 2014. (**Best paper Award**)
 31. **Ragaad AITarawneh**, Jens Bauer, Shah Rukh Humayoun, and Achim Ebert. "ESSAVis++: an interactive 2Dplus3D visual environment to help engineers in understanding the safety aspects of embedded system". In Proceedings of the 2014 ACM SIGCHI symposium on Engineering interactive computing systems (EICS 2014), pp. 201-204, ACM, 2014.
 32. Shah Rukh Humayoun, **Ragaad AITarawneh**, Achim Ebert, and Yael Dubinsky. "Automate the Decision on Best-Suited UI Design for Mobile Apps". In Proceedings of the 1st International Conference on Mobile Software Engineering and Systems (MOBILESoft 2014), ACM, pp. 66-68, 2014.
 33. **Ragaad AITarawneh**, Andreas Griesser, Jens Bauer, Shah Rukh Humayoun, and Achim Ebert. "Poster: 3DintEx -- A Tool to Explore Interactively the Structural and Behavioral Aspects of System Models in 3D Environments". In IEEE 9th Symposium on 3D User Interfaces (3DUI 2014), pp. 141-142, March 29-30, 2014, Minneapolis (MN), USA.
 34. **Ragaad AITarawneh**, Jens Bauer, Achim Ebert. *A Visual Interactive Environment for Enhancing Collaboration between Engineers for the Safety Analysis Mechanisms in Embedded Systems*. In CSCW Companion '14. ACM, New York, NY, USA, 125-128, 2014.
 35. **Ragaad AITarawneh**, Johannes Schultz, and Shah Rukh Humayoun. "CluE: An Algorithm for Expanding Clustered Graphs". In Proc. of the 7th IEEE Pacific Vis. Symposium (PacificVis) 2014, IEEE, pp. 233-37, Japan, March 4-7, 2014.
 36. **Ragaad AITarawneh**, Achim Ebert, and Eduard Kosel. "The

- Stereoscopic Filtering Technique*". Poster in IEEE VIS 2013, Atlanta, Georgia, USA, 13-18 Oct. 2013.
37. **Ragaad AlTarawneh**, Jens Bauer, Patric Keller, and Achim Ebert. "*ESSAVis: A 2Dplus3D Visual Platform for Speeding Up the Maintenance Process of Embedded Systems*". In the 27th Int. British Computer Society Human Computer Interaction Conference (BCS-HCI 2013), Brunel University, UK, 9 - 13 Sep 2013.
 38. **Ragaad AlTarawneh**, Shah Rukh Humayoun. "A Two-Perspective Visualization Approach for Utilizing Visualization Power in Computer Science Education". CSERC '13, ACM, 4-5 April, 2013, Arnhem/Nijmegen, the Netherlands.
 39. **Ragaad AlTarawneh**, Jens Bauer, Shah Rukh Humayoun, Patric Keller, Achim Ebert. "*The Extended Stereoscopic Highlighting Technique for Node-Link Diagrams: An Empirical Study*". The 14th IASTED Int. Conf. on Computer Graphics and Imaging (CGIM 2013), Feb. 12–14, 2013.
 40. **Ragaad AlTarawneh**, Jens Bauer, Patric Keller, Achim Ebert, and Peter Liggesmeyer. "*ESSAVis: A Framework to Visualize Safety Aspects in Embedded Systems*". Proceedings of SIGRAD 2012, Interactive Visual Analysis of Data, November 29–30, 2012, Växjö, Sweden.
1. **Ragaad AlTarawneh**, Shah Rukh Humayoun, and Abdel-karim Al-Jaafreh. "*Towards Optimizing the Sunburst Visualization for Smart Mobile Devices*". IFIP WG 13.7 Workshop on Designing Interaction and Visualization for Mobile Applications (DIViM 2015), In conjunction with INTERACT 2015, September 14, 2015.
 2. Ragaad AlTarawneh, Carl S. Marshall, Selvakumar Panneer, and Cindy K. Chung. "*3DIM: An Interactive 3D Map to Visualize Geo-Spatial Data in Mobile Devices*". IFIP WG 13.7 Workshop on Designing Interaction and Visualization for Mobile Applications (DIViM 2015), In conjunction with INTERACT 2015, September 14, 2015.
 3. Ragaad AlTarawneh, Jens Bauer, Nicole Menck, Shah Rukh Humayoun, and Achim Ebert. "*assistME: A Collaborative Mobile Environment to Help Engineers in Maintaining the Factory Pipeline*". MobilENG 2014 Workshop, In conjunction with 5th international conference on Complex Systems Design & Management (CSD&M) 2014, Paris, France, Nov. 14, 2014.
 4. **Ragaad AlTarawneh**, Shah Rukh Humayoun. "*Evolving Prototypes Towards The Best-suited Design and Interaction Schema Through Using The Genetic Algorithm*". MobileHCI '13 Workshop: PID-MAD 2013, Munich, Germany, August 27, 2013. **(Best paper Award)**

