

## General Information

- ✓ *Full name:* **Mazyar Seraj**
- ✓ *Place of Residence:* Bremen – Germany
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- ✓ *Office address:* Room 1.51, Cyber-Physical Systems, German Research Center for Artificial Intelligence (DFKI), Building Cartesium, University of Bremen, Enrique-Schmidt-Str. 5, 28359 Bremen, Germany.
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- ✓ *Skype:* maziarser



## Educational Information

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|--|--|---------------------|-----------------|--|---------------------|
| 10/2016-Present  | <b>University of Bremen</b><br><small>Ph.D. candidate in “Dr. -Ing. In Computer Science”<br/> Program was Conducted Entirely in English Language</small>         | Bremen, Germany     |                 |  |                     |
| <ul style="list-style-type: none"> <li>✓ <i>PhD. Thesis title:</i><br/> <b>Impacts of Visual Block-based Programming on Motivation and Acquisition of Programming Skills in the Context of Smart Environments</b> (in English)</li> <li>✓ <i>PhD. Thesis Supervisor:</i> Prof. Dr. Rolf Dreschler</li> </ul>   |  |                     |                 |  |                     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 25%; vertical-align: top;">02/2010-06/2012</td> <td style="width: 45%; vertical-align: top; text-align: center;"> <b>Multimedia University (MMU)</b><br/> <small>Master of Multimedia (E-learning technologies)<br/> Program was Conducted Entirely in English Language</small> </td> <td style="width: 30%; vertical-align: top; text-align: right;">Cyberjaya, Malaysia</td> </tr> </table> |  |                     | 02/2010-06/2012 | <b>Multimedia University (MMU)</b><br><small>Master of Multimedia (E-learning technologies)<br/> Program was Conducted Entirely in English Language</small>      | Cyberjaya, Malaysia |
| 02/2010-06/2012  | <b>Multimedia University (MMU)</b><br><small>Master of Multimedia (E-learning technologies)<br/> Program was Conducted Entirely in English Language</small>      | Cyberjaya, Malaysia |                 |  |                     |
| <ul style="list-style-type: none"> <li>✓ <i>Master. Cumulative grade point average:</i> 3.92 from 4 point</li> <li>✓ <i>Master. Thesis grade:</i> A (4 from 4 point)</li> <li>✓ <i>Master. Thesis title:</i><br/> <b>Impact of Small Screen Interfaces on Learning Link State Routing Algorithms on Mobile Platforms</b> (in English)</li> <li>✓ <i>Master. Thesis Supervisor:</i> Chui Yin Wong</li> </ul>  |  |                     |                 |  |                     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 25%; vertical-align: top;">09/2004-02/2009</td> <td style="width: 45%; vertical-align: top; text-align: center;"> <b>Azad University of Mashhad</b><br/> <small>Bachelor of Science in Computer Software Engineering<br/> Program was Conducted Entirely in Persian Language</small> </td> <td style="width: 30%; vertical-align: top; text-align: right;">Mashhad, Iran</td> </tr> </table>  |  |                     | 09/2004-02/2009 | <b>Azad University of Mashhad</b><br><small>Bachelor of Science in Computer Software Engineering<br/> Program was Conducted Entirely in Persian Language</small> | Mashhad, Iran       |
| 09/2004-02/2009  | <b>Azad University of Mashhad</b><br><small>Bachelor of Science in Computer Software Engineering<br/> Program was Conducted Entirely in Persian Language</small> | Mashhad, Iran       |                 |  |                     |
| <ul style="list-style-type: none"> <li>✓ <i>B.Sc. Cumulative grade point average:</i> 15.11 from 20 point</li> </ul>   |  |                     |                 |  |                     |

## Scientific Contributions and Communities

### Book Contribution:

- ✓ Mazyar Seraj, “**Impact of small screen interfaces on learning technical subject – Learning Dijkstra’s shortest path algorithm on mobile platforms**”.  
LAMBERT Academic Publishing, Germany. ISBN: 978-3-659-88006-3.

### Conference Papers:

- ✓ M. Seraj, E.S. Katterfeldt, K. Bub, S. Autexier, R. Drechsler. “**Scratch and Google Blockly: How Girls’ Programming Skills and Attitudes are Influenced**”.  
Proceedings of the 19th Koli Calling International Conference on Computing Education Research (Koli 2019), 21-24 November 2019, Koli, Finland. ACM. DOI: [10.1145/3364510.3364515](https://doi.org/10.1145/3364510.3364515)
- ✓ M. Seraj, C.S. Große, S. Autexier, R. Drechsler. “**Smart Homes Programming: Development and Evaluation of an Educational Programming Application for Young Learners**”.  
Proceedings of the ACM Interaction Design and Children conference (IDC 2019), 12-15 June 2019, Boise, Idaho, USA. ACM. DOI: [10.1145/3311927.3323157](https://doi.org/10.1145/3311927.3323157)
- ✓ M. Seraj, C.S. Große, S. Autexier, R. Drechsler. “**Look What I Can Do: Acquisition of Programming Skills in the Context of Living Labs**”.  
Proceedings of the 40th International Conference on Software Engineering: Software Engineering Education and Training (ICSE 2019), pp.197-2017, 25-31 May 2019, Montréal, QC, Canada, IEEE. DOI: [10.1109/ICSE-SEET.2019.00029](https://doi.org/10.1109/ICSE-SEET.2019.00029)
- ✓ M. Seraj, S. Autexier, J. Janssen. “**BEESM, a block-based educational programming tool for end users**”.  
Proceedings of the 10th Nordic Conference on Human-Computer Interaction (NordiCHI 2018), pp.886-891, 29 September-3 October 2018, Oslo, Norway. ACM. DOI: [10.1145/3240167.3240239](https://doi.org/10.1145/3240167.3240239)
- ✓ M. Seraj, C.Y. Wong. “**A Study of User Interface Design Principles and Requirements for Developing a Mobile Learning Prototype**”.  
Proceedings of International Conference on Computer & Information Science (ICCIS 2012), vol. 2, pp.1014-1019, 12-14 June 2012, Kuala Lumpur, Malaysia. IEEE. DOI: [10.1109/ICCISci.2012.6297174](https://doi.org/10.1109/ICCISci.2012.6297174)

### Journal Articles:

- ✓ M. Seraj, C.Y. Wong. “**Impacts of Different Mobile User Interfaces on Student Satisfaction for Learning Dijkstra’s Shortest Path Algorithm**”.  
*International Journal of interactive Mobile Technologies (iJIM)*, 8 (4), pp.24-30 (2014). Germany: kassel university press GmbH. ISSN: 1865-7923. DOI: [10.3991/ijim.v8i4.3860](https://doi.org/10.3991/ijim.v8i4.3860)
- ✓ M. Seraj, C.Y. Wong. “**Lecturers and Students’ Perception on Learning Dijkstra’s Shortest Path Algorithm Through Mobile Devices**”.  
*International Journal of interactive Mobile Technologies (iJIM)*, 8 (3), pp.19-24 (2014). Germany: kassel university press GmbH. ISSN: 1865-7923. DOI: [10.3991/ijim.v8i3.3745](https://doi.org/10.3991/ijim.v8i3.3745)

### Communities:

- ✓ I am a regular reviewer for the ACM Special Interest Group on Computer Science Education (SIGCSE). I was also a reviewer for the ACM Global Computing Education Conference (CompEd), 2019.
- ✓ I am a technical program committee member of the international conference on Advances in Computer-Human Interactions (ACHI), 2020.
- ✓ I am a member of the Association for Computing Machinery (ACM).

## Work Experiences

12/2016 – Present      **German Research Center for AI (DFKI)**      Bremen, Germany

- ✓ *Position Held:* **Researcher (15/12/2016 – Present)**
- ✓ *Activities:* Research Staff in the Research Department for Cyber-Physical Systems.
- ✓ *Descriptions:*
  - Research on Computer Science education. In particular, visual block-based programming environments.
  - Research on Human-Computer Interaction in the context of smart living labs.
  - Working for Bremen Ambient Assisted Living Lab (BAALL).

02/2016 – 08/2016      **LIMKOKWING University (LUCT)**      Cyberjaya, Malaysia

- ✓ *Position Held:* **Lecturer (01/02/2016 – 30/08/2016)**
- ✓ *Activities:* Lecturer in Faculty of Multimedia Creativity.
- ✓ *Descriptions:*
  - Teaching several programming languages such as HTML, CSS, PHP, JavaScript, Action Script, and SQL for Web-based and Interactive-based Subjects.
  - Teaching principles and requirements of User Interface Design and Human-Computer Interaction for designing and developing the web, interactive, and mobile-based applications.
  - Teaching Research Methodology subject to Bachelor of Creative Multimedia students.

04/2015 – 07/2015      **Ghataat Ahangari Khorasan (GAK)**      Mashhad, IRAN  
Manufacturer Factory of Agricultural Instruments

- ✓ *Position Held:* **IT Department Supervisor (21/04/2015 – 22/07/2015)**
- ✓ *Activities:* IT Supervisor and Developer.
- ✓ *Descriptions:*
  - Managing all computer systems, servers, networks and other ICT facilities.
  - Planning, developing and implementing new technologies on the company's ICT systems.
  - Troubleshooting and plan to resolve the troubles in the company's website, network, and software systems.

07/2012 – 12/2014      **LIMKOKWING University (LUCT)**      Cyberjaya, Malaysia

- ✓ *Position Held:* **Lecturer (19/07/2013 – 31/12/2014)**
- ✓ *Activities:* Lecturer in Faculty of Multimedia Creativity (19<sup>th</sup> July 2012 until 31<sup>st</sup> December 2014).
- ✓ *Descriptions:*
  - Teaching several programming languages such as HTML, CSS, PHP, Action Script, C++, and SQL for Web-based and Interactive-based Subjects.
  - Teaching principles and requirements of User Interface Design and Human-Computer Interaction for designing and developing the web, interactive, and mobile-based applications.
  - Communicating with industrial companies as well as reconciling the content of Web-based and Interactive-based subjects with new knowledge and technologies and making them relevant to the subjects and suitable to deliver to students.

02/2008 - 06/2009      **Sobhan Computer Institute**      Mashhad, IRAN

- ✓ *Position Held:* **Tutor (Three Semesters)**
- ✓ *Activities:* Teaching ICDL (1<sup>st</sup> February 2008 until 1<sup>st</sup> June 2009)
- ✓ *Description:*
  - Teaching International Computer Driving Licence (ICDL) special course to Payam Nour University Students.

## Research and Development Projects

### **SMILE** (*Applying Smart Environments as Motivating Learning Environments*):

- ✓ *Area of Working:*  
**Unique assisted learning system to control smart objects and living labs via visual block-based programming environments**
- ✓ *Duration:* **01/05/2017 until 31/03/2020**
- ✓ *Employer:* **German Research Center for Artificial Intelligence (DFKI)**
- ✓ *Project Description:*

The idea of this project was to create a visual block-based learning system to work with Smart Environments, Micro-controllers, and Mobile Robots. The system enables inexperienced students and novice programmers to program smart environments, micro-controllers, and mobile robots one at a time and in combination with each other. In this way, we took advantage of visual programming libraries such as Google Blockly in order to develop our learning system.

The starting point was to produce a unique learning system, including a frontend, middleware, and backend, which can work based on Open Home Automation Bus (OpenHAB), Arduino Code, and Robot Operating System (ROS). This learning system allows application developers and educators to synchronize their desire backend system with our system's frontend having minimal changes in the middleware. In the next step, the learning system should be able to train itself in order to generate learning recommendations using the end-user input data such as the code which is produced by them.

### **SELFIE** (*Self-Verification of Electronic Systems*):

- ✓ *Area of Working:*  
**Visualization of Bremen Ambient Assisted Living Lab (BAALL)**
- ✓ *Duration:* **15/12/2016 until 30/04/2017**
- ✓ *Employer:* **German Research Center for Artificial Intelligence (DFKI)**
- ✓ *Project Description:*

The idea of this project was to virtualize the "Bremen Ambient Assisted Living Lab" (BAALL). In this way, we took advantage of photogrammetric methods. Thus, the starting point was to take a set of appropriate photographs from the BAALL and then reconstruct the geometry and texture of the BAALL's interior. In the next step, reconstruction errors like holes, peek, etc. were eliminated. Finally, dynamic objects (e.g., doors) were segmented from the static geometry mesh, and so the 3D-model could be dynamic and interactive.

## Computer and Language Skills

### **Computer Skills:**

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| <ul style="list-style-type: none"> <li>✓ <i>Programming Language:</i> <ol style="list-style-type: none"> <li>1. PHP, HTML, CSS</li> <li>2. JavaScript, ActionScript3</li> <li>3. Python</li> <li>4. C/C++</li> </ol> </li> </ul> | <ul style="list-style-type: none"> <li>✓ <i>Integrated Development Environment:</i> <ol style="list-style-type: none"> <li>1. IntelliJ IDEA</li> <li>2. Eclipse IDE</li> <li>3. Notepad++</li> <li>4. Flash Developer</li> </ol> </li> </ul> |
| <ul style="list-style-type: none"> <li>✓ <i>Robot Operating System:</i> <ol style="list-style-type: none"> <li>1. Robot Operating System (ROS)</li> </ol> </li> </ul>  | <ul style="list-style-type: none"> <li>✓ <i>Home Automation Tool:</i> <ol style="list-style-type: none"> <li>1. Open Home Automation Bus (OpenHAB)</li> </ol> </li> </ul>  |
| <ul style="list-style-type: none"> <li>✓ <i>Adobe Suite:</i> <ol style="list-style-type: none"> <li>1. Adobe Dreamweaver</li> <li>2. Adobe Flash / Animate</li> <li>3. Adobe Photoshop</li> </ol> </li> </ul>                    | <ul style="list-style-type: none"> <li>✓ <i>Microsoft Office:</i> <ol style="list-style-type: none"> <li>1. Word</li> <li>2. PowerPoint</li> <li>3. Access</li> </ol> </li> </ul>  |

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| ✓ <i>Database Software:</i><br>1. Microsoft SQL Server<br>2. MySQL Development Server | ✓ <i>3D Software:</i><br>1. Agisoft PhotoScan<br>2. ZBrush 4R7                         |
| ✓ <i>Operating System:</i><br>1. Windows<br>2. Linux Ubuntu<br>3. Android             | ✓ <i>Other Computer Software:</i><br>1. IBM SPSS data analysis<br>2. Latex<br>3. Visio |

## **Language Skills:**

**Persian** (Native), **English** (Fluent), **German** (Scholar Level), **Spanish** (Notions).

## **Area of Interests**

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| ✓ Computer Science Education<br>✓ Visual Programming<br>✓ Interactive Educational Systems | ✓ Human-Computer Interaction (HCI)<br>✓ Software Engineering |
|---|--|

## **Referees**

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- ✓ **Prof. Dr. Rolf Drechsler** (PhD Supervisor)  
 Head of the Work Group of Computer Architecture (AGRA), Faculty of Mathematics and Computer Science, University of Bremen, Germany.  
 Head of Cyber-Physical Systems, German Research Center for Artificial Intelligence (DFKI), Bremen, Germany.  
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- 
- ✓ **Dr.-Ing. Serge Autexier** (Project Manager at DFKI)  
 Director of Bremen Ambient Assisted Living Lab (BAALL), Cyber-Physical Systems, German Research Center for Artificial Intelligence (DFKI), Bremen, Germany.  
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 Email: [serge.autexier@dfki.de](mailto:serge.autexier@dfki.de)
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- ✓ **Chui Yin Wong** (Master Thesis Supervisor)  
 Senior Lecturer, Faculty of Creative Multimedia, Multimedia University (MMU), Cyberjaya, Malaysia.  
 Leader of Special Interest Group (SIG) on Universal Usability and Interaction Design (UID) at MMU.  
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 Email: [cywong@mmu.edu.my](mailto:cywong@mmu.edu.my)