

Mohammad Chegini



Location: Vienna, Austria | LinkedIn: [linkedin.com/in/mchegini](https://www.linkedin.com/in/mchegini)

Work Experience

Software Engineer (R&D)

Siemens Corporate Technology, Austria

Working at Scalable and Resilient Architecture group.

Aug 2020 - Present

- Researched, designed, and implemented visual anomaly detection framework for assembly lines for factories in Vienna (Python, Tensorflow, Docker, Google AI, AWS, Edge Computing, CUDA).
- Researched and implemented deep reinforcement learning software for precise PCB assembly tasks using robots (Python, OpenAI Gym, AWS, ROS, pyBullet).

PhD Researcher

TU Graz & Fraunhofer Singapore, Austria/Singapore

TU Graz is an accredited university in Styria, and Fraunhofer is an organization for applied research in Europe.

Feb 2017 - Aug 2020

- Developed software and published papers that combine machine learning techniques with data visualization, multi-touch displays, and eye-tracking (Java, JavaFX, Python, Google APIs).
- Posted to all four Fraunhofer IGD offices located in Austria, Germany, and Singapore.

Product Manager

Simorgh co. in affiliation with NPM GmbH., Iran

Simorgh co. (NPM GmbH.) is an IoT R&D start-up (10-15 employees).

Sep 2014 - Jan 2017

- Managed a team of designers and software engineers in full software/hardware development life cycle to build D!Office, a smart home IoT mobile application (Java, .Net Framework, Microservices).
- Wrote *Game Engine for Pervasive Games* proposal that acquired funding of \$300K from the ministry of information and communications technology of Iran.

Product Manager (Co-founder)

Hafsang, Iran

Hafsang was a start-up, focused on local markets for mobile games and applications (10-15 employees).

Jul 2012 - Sep 2014

- Product manager of game titles with a total of 100K monthly active users (C#, Unity3D, Android).
- Acquired two rounds of annual fundraising of \$50K (angel investors).
- Assembled a game studio with a team of ten software engineers, digital artists, and game designers.

Software Engineer

ViraTech, Iran

ViraTech produces quality products in the IT industry, such as GIS software and mapping services.

Jul 2011 - Jul 2012

- Developed a 3D GIS software (OpenSceneGraph, C++, Qt Creator).

Software Engineer Intern

SyMLab, HKUST, Hong Kong

SyMLab is a research institute located at Hong Kong University of Science and Technology and affiliated to Deutsche Telekom.

Summer 2015

- Designed a cloud-based augmented reality framework for mobile applications (Java, ARToolkit).

Education

PhD in Computer Science

2017 - 2020

TU Graz & Nanyang Technological University joint degree, Austria/Singapore

Thesis: "Interactive Visual Data Analysis Supported by Novel Interaction Modalities" | Advisors: Prof. Tobias Schreck, Prof. Keith Andrews, Prof. Alexei Sourin

Grade: very good (highest grade)

Master in Information Technology

2014 - 2016

University of Tehran, Iran

The oldest and the best multidisciplinary university in Iran.

Thesis: "Using Ubiquitous Games in Adaptive Learning Environments: Impact on Learning Outcome and Motivation" | Advisor: Prof. Omid Fatemi

GPA: 18.13/20 (Honors)

B.Sc. in Information Technology

2009 - 2014

Sharif University of Technology, Iran

The best technical university in Iran.

Thesis: "Design and Implementation of a Video Game, Missions of a Flying Object" | Advisor: Prof. Mansour Jamzad

GPA: 15.68/20

Awards

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|-------------------|---|
| Best Paper Award | 2019 IWAIT conference in Singapore for "Multiple Linked-View Exploration on Large Displays Facilitated by a Secondary Hand-held Device" paper. |
| Honorable Mention | 2018 infoVis (IEEE Conference on Information Visualization) for "Integrated Visualization of Structure and Attribute Similarity of Multivariate Graphs" poster. |
| Best Poster Award | 2016 ICELET (The 10th Conference on e-Learning and e-Teaching) for "The Guideline for Designing Pervasive Games for Learning" poster. |

Research Visits

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| Monash University | In 2019, was invited to Immersive Analytics Lab in Melbourne by Prof. Tim Dwyer and Dr. Sarah Goodwin to give a talk. |
| Fraunhofer Singapore | In 2018/2019, stayed for a year at Fraunhofer Singapore as part of TU Graz and NTU joint PhD program. |
| TU Darmstadt | In 2018, worked with Jürgen Bernard on multiple publications through TU Graz and TU Darmstadt collaboration. |
| University of Rostock | In 2018, was invited by Prof. Heidrun Schumann and Dr. Christian Tominski to conduct research in Rostock which resulted in multiple publications. |
| HKUST | In 2015 did an internship in Hong Kong with Prof. Pan Hui. |

Languages

English (fluent), German (B1), Persian (native)

PhD Publications

- [1] Mohammad Chegini, Jürgen Bernard, Jian Cui, Fatemeh Chegini, Alexei Sourin, Keith Andrews, and Tobias Schreck. “Interactive Visual Labelling versus Active Learning: An Experimental Comparison”. In: *Frontiers of Information Technology & Electronic Engineering* 21.4 (2020), pp. 524–535. ISSN: 2095-9184. DOI: 10.1631/FITEE.1900549. URL: https://pure.tugraz.at/ws/portalfiles/portal/28007175/Interactive_Labelling_versus_Active_Learning_FITEE_2020_preprint.pdf.
- [2] Mohammad Chegini, Keith Andrews, Tobias Schreck, and Alexei Sourin. “Eye-Tracking Based Adaptive Parallel Coordinates”. In: *Proc. 2019 SIGGRAPH Asia Poster (SA’2019)*. (Brisbane, Australia). ACM, Nov.17, 2019, 44:1–44:2. ISBN: 145036943X. DOI: 10.1145/3355056.3364563. URL: <https://dl.acm.org/doi/abs/10.1145/3355056.3364563>.
- [3] Mohammad Chegini, Keith Andrews, Tobias Schreck, and Alexei Sourin. “Multiple linked-view exploration on large displays facilitated by a secondary handheld device”. In: *International Workshop on Advanced Image Technology (IWAIT) 2019*. Vol. 11049. International Society for Optics and Photonics. 2019, 110490H. URL: <https://ftp.isds.tugraz.at/pub/papers/chegini-iwait2019-second-device.pdf>.
- [4] Mohammad Chegini, Jürgen Bernard, Philip Berger, Alexei Sourin, Keith Andrews, and Tobias Schreck. “Interactive Labelling of a Multivariate Dataset for Supervised Machine Learning Using Linked Visualisations, Clustering, and Active Learning”. In: *Visual Informatics* 3.1 (2019), pp. 9–17. DOI: 10.1016/j.visinf.2019.03.002. URL: <https://www.sciencedirect.com/science/article/pii/S2468502X19300178>.
- [5] Mohammad Chegini, Jürgen Bernard, Lin Shao, Alexei Sourin, Keith Andrews, and Tobias Schreck. “mVis in the Wild: Pre-Study of an Interactive Visual Machine Learning System for Labelling”. In: *Proc. IEEE Vis 2019 Workshop on Evaluation of Interactive Visual Machine Learning Systems (EVIVA-ML)*. 2019. URL: https://pure.tugraz.at/ws/portalfiles/portal/25131270/mvis_evaluation_EVIVA_ML_2019.pdf.
- [6] Philip Berger, Mohammad Chegini, Heidrun Schumann, and Christian Tominski. *Integrated Visualization of Structure and Attribute Similarity of Multivariate Graphs*. Poster at IEEE Conference on Information Visualization (InfoVis). Berlin, Germany, 2018. URL: https://vcg.informatik.uni-rostock.de/~ct/pub_files/Berger18IntegratedMatrix.pdf.
- [7] Mohammad Chegini, Lin Shao, Keith Andrews, and Tobias Schreck. “Toward Multimodal Interaction of Scatterplot Spaces Exploration”. In: *Proc. AVI Workshop on Multimodal Interaction for Data Visualization*. 2018. URL: https://multimodalvis.github.io/papers/AVI_2018_paper_149.pdf.
- [8] Mohammad Chegini, Lin Shao, Robert Gregor, Dirk J. Lehmann, Keith Andrews, and Tobias Schreck. “Interactive Visual Exploration of Local Patterns in Large Scatterplot Spaces”. In: *Computer Graphics Forum (CGF)* 37.3 (2018), pp. 99–109. URL: http://v22015081501727525.yourvserver.net/webpage/dirkfiles/publications/Lehmann_2018_EV.pdf.
- [9] Mohammad Chegini, Lin Shao, Keith Andrews, Dirk J. Lehmann, and Tobias Schreck. “Interaction Concepts for Collaborative Visual Analysis of Scatterplots on Large Vertically-Mounted High-Resolution Multi-Touch Displays”. In: *Proc. Forum Media Technology (FMT 2017)*. 2017, pp. 90–96. URL: http://v22015081501727525.yourvserver.net/webpage/dirkfiles/publications/Lehmann_FMT_2017.pdf.