



Norman Peitek

PhD Student

Programmer researching programmers.

Education

- 2012–2014 **Master of Science**, *Otto von Guericke University Magdeburg, Germany, 1.5 (Very Good)*.
Major: Business Information Systems
Thesis: Exploration of Competitive Market Behavior Using Near-Real-Time Sentiment Analysis (1.1, Very Good)
- 2011 **Exchange Semester**, *University of Wisconsin—Stevens Point, USA*.
- 2009–2012 **Bachelor of Science**, *Otto von Guericke University Magdeburg, Germany, 1.7 (Good)*.
Major: Business Information Systems
Thesis: Using the Orientation Sensor for GeoPointing on Indoor Maps (1.0, Very Good)
- 2009 **Exchange Student**, *Thompson Rivers University, Canada*.

PhD Thesis

- working title *Framework for a Neuro-Cognitive Perspective of Program Comprehension*
- advisor Janet Siegmund
- graduation 2020 (expected)

Experience

Vocational

- Since 2016 **Doctoral Researcher**, *Leibniz Institute for Neurobiology, Magdeburg, Germany*.
Researching program comprehension and programmer expertise with a novel perspective of fMRI and eye tracking.
- Since 2014 **Co-Founder**, *futurestud.io*.
Teaching developers technical skills on Android and web development.

2014–2016 **Software Developer & Consultant**, *Ultra Tendency*, Magdeburg, Germany.
I worked as an IT Consultant on projects for medium to large businesses. My focus areas were mobile apps, especially Android, node.js and large business applications with C# .NET.

Student Assistance

2013–2014 **Student Intern**, *University of Wisconsin—Stevens Point*, USA.
Year-long internship at the department of Web and Media Services. I was responsible of transferring old legacy software systems to new standard software in an advisory and technical role. The majority was re-implemented on SharePoint 2010.

2011, 2013 **Research Assistant**, *Otto von Guericke University Magdeburg*, Germany.

2012 **Research Assistant**, *Berlin School of Economics and Law*, Germany.

Other

2009 **Alternative Civilian Service**, *University Clinic Magdeburg*, Germany.

Teaching

Lecturer

2015, 2016 **Mobile and Distributed Systems**, *Bingen University of Applied Sciences*, Germany.

Guest Lecture

2019, 2020 **Program Comprehension Research with Neuroscience Methods**, *TU Chemnitz*, Germany.

2019 **Program Comprehension Research with Neuroscience Methods**, *Saarland University*, Germany.

Professional Service

2020 Organizer: International Workshop on Eye Movements in Programming (EMIP)

2019 Social Media Chair: International Workshop on Eye Movements in Programming (EMIP)

Program Committees

2019 International Workshop on Eye Movements in Programming (EMIP)

2019 ACM Symposium on Eye Tracking Research & Applications (ETRA-ET4S)

2018 IEEE/ACM International Conference on Program Comprehension (ICPC)

Reviewer

2020 Cognitive Science, Wiley

2018–2020 Empirical Software Engineering (EMSE), Springer

2020 Transactions on Software Engineering and Methodology (TOSEM), ACM

2019 Transactions on Software Engineering (TSE), IEEE

2019 Human Brain Mapping, Wiley

2019 PLOS ONE, Public Library of Science

Awards

- 2019 **Best Tool Demo Award**, *International Conference on Program Comprehension (ICPC)*.
- 2011–2014 **Full Study Scholarship**, *Friedrich Naumann Foundation for Freedom*.
- 2012 **DASMA future award 2012 (nominated)**, *German speaking user association for software metrics and effort estimation (DASMA)*.
- 2008 **Award for Excellent School Performance in Physics**, *German Physical Society*.
- 2008 **Award for Outstanding Achievements in Physics**, *German Physical Society*.

Languages

German	Native proficiency
English	Full professional proficiency
French	Elementary proficiency

Publications

Book Chapters

- [1] Michael Hanke, Sebastiaan Mathôt, Eduard Ort, Norman Peitek, Jörg Stadler, and Adina Wagner. *A Practical Guide to Functional Magnetic Resonance Imaging with Simultaneous Eye Tracking for Cognitive Neuroimaging Research*, pages 291–305. Springer US, 2020.

Refereed Journal Articles

- [2] Janet Siegmund, Norman Peitek, André Brechmann, Chris Parnin, and Sven Apel. Studying Programming in the Neuroage: Just a Crazy Idea? *Communications of the ACM*, 2020. To appear.
- [3] Norman Peitek, Janet Siegmund, Sven Apel, Christian Kästner, Chris Parnin, Anja Bethmann, Thomas Leich, Gunter Saake, and André Brechmann. A Look into Programmers' Heads. *IEEE Transactions on Software Engineering (TSE)*, 2018.

Refereed Conference Papers

- [4] Norman Peitek, Janet Siegmund, and Sven Apel. What Drives the Reading Order of Programmers? An Eye Tracking Study. In *Proc. Int'l Conference Program Comprehension (ICPC)*. IEEE, 2020.
- [5] Norman Peitek, Sven Apel, André Brechmann, Chris Parnin, and Janet Siegmund. CodersMUSE: Multi-Modal Data Exploration of Program-Comprehension Experiments. **Best Tool Demo Award**. In *Proc. Int'l Conference Program Comprehension (ICPC)*, pages 126–129. IEEE, 2019.
- [6] Jennifer Bauer, Janet Siegmund, Norman Peitek, Johannes Hofmeister, and Sven Apel. Indentation: Simply a Matter of Style or Support for Program Comprehension? In *Proc. Int'l Conference Program Comprehension (ICPC)*, pages 154–164. IEEE, 2019.
- [7] Norman Peitek, Janet Siegmund, Chris Parnin, Sven Apel, Johannes Hofmeister,

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- and André Brechmann. Simultaneous Measurement of Program Comprehension with fMRI and Eye Tracking: A Case Study. In *Proc. Int'l Symposium Empirical Software Engineering and Measurement (ESEM)*, pages 24:1–24:10. ACM, 2018.
- [8] Norman Peitek, Janet Siegmund, Chris Parnin, Sven Apel, and André Brechmann. Toward Conjoint Analysis of Simultaneous Eye-Tracking and fMRI Data for Program-Comprehension Studies. In *Proc. Int'l Workshop on Eye Movements in Programming*, pages 1:1–1:5. ACM, 2018.
- [9] Norman Peitek, Janet Siegmund, Chris Parnin, Sven Apel, and André Brechmann. Beyond Gaze: Preliminary Analysis of Pupil Dilation and Blink Rates in an fMRI Study of Program Comprehension. In *Proc. Int'l Workshop on Eye Movements in Programming*, pages 4:1–4:5. ACM, 2018.
- [10] Norman Peitek. A Neuro-Cognitive Perspective of Program Comprehension. In *Companion Proc. of Int'l Conf. on Software Engineering, ICSE 2018*, pages 496–499. IEEE, 2018.
- [11] Janet Siegmund, Norman Peitek, Chris Parnin, Sven Apel, Johannes Hofmeister, Christian Kästner, Andrew Begel, Anja Bethmann, and André Brechmann. Measuring Neural Efficiency of Program Comprehension. In *Proc. Joint Meeting on Foundations of Software Engineering, ESEC/FSE*, pages 140–150. ACM, 2017.
- [12] Robert Neumann, Norman Peitek, and Juan José Cuadrado-Gallego. Geopointing on Indoor Maps: Enhancing Compass Sensor Accuracy to Enable Interactive Digital Object Selection in Smartphone-Based Map Applications. In *Proc. Int'l symposium on Mobility Management and Wireless Access*, pages 63–70. ACM, 2012.
- Others
- [13] Norman Peitek, Janet Siegmund, Chris Parnin, Sven Apel, Johannes Hofmeister, Christian Kästner, Andrew Begel, Anja Bethmann, and André Brechmann. Neural Efficiency of Top-Down Program Comprehension. In *Proc. of Software Engineering (SE)*, pages 151–152. GI, 2018.
- [14] Norman Peitek, Janet Siegmund, and André Brechmann. Enhancing fMRI Studies of Program Comprehension with Eye-Tracking. In *Proc. Int'l Workshop on Eye Movements in Programming*, pages 22–23. Freie Universität Berlin, 2017.
- [15] Chris Parnin, Janet Siegmund, and Norman Peitek. On the Nature of Programmer Expertise. In *Proc. Annual Conf. Psychology of Programming Interest Group (PPIG)*, pages 109–118, 2017.
- [16] Johannes Hofmeister, Jennifer Bauer, Janet Siegmund, Sven Apel, and Norman Peitek. Comparing Novice and Expert Eye Movements during Program Comprehension. In *Proc. Int'l Workshop on Eye Movements in Programming*, pages 17–18. Freie Universität Berlin, 2017.
- [17] Norman Peitek. Exploration of Competitive Market Behavior Using Near-Real-Time Sentiment Analysis (Master Thesis), 2014.