Martin Schrimpf

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Education

Since 09/2017	**PhD student**, *MIT Brain and Cognitive Sciences (BCS)* Research at the bridge of Machine Learning and Neuroscience. Current rotation with James DiCarlo and Joshua Tenenbaum on visual decomposition in deep learning models as well as the brain's ventral stream. Future projects will be in the direction of learning.
10/2014 - 05/2017	**Elite Master's Program Software Engineering**, *TU & LMU Munich & University of Augsburg, GPA* 4.0 *w/ honors* Formal Methods, Distributed Systems, Project Management, Databases, Human Computer Interaction. Extra courses in Machine Learning. **Master's Thesis** at *Harvard University* on the role of brain-inspired recurrent neural algorithms for advanced object recognition.
10/2011 - 07/2014	**Bachelor's Program Information Systems**, *TU Munich, GPA* 3.8 Combination of economic fundamentals and computer science with a focus on Information Systems. **Bachelor's Thesis** at the *University of Sydney*: Investigation of hardware transactional memory and its effectiveness as a synchronization technique for databases, graded $A+$. **Study Abroad** at the *Auckland University of Technology*: Courses in Artificial Intelligence and Management. Project on a novel landmark-based approach to perceptual mapping (SLAM) at CAIR.
2003 - 2011	**Abitur**, *Gymnasium Dorfen, GPA* 3.7 Focus on Mathematics, Computer Science, Economics, English. **USA-exchange** with the *C.D. Hylton High school* in Virginia

Experience

05/2017 - 08/2017	**Deep Learning Intern**, *Salesforce Einstein AI (former MetaMind)* Research in the emerging field of automated architecture search. We took a flexible approach to define a recurrent architecture and found several architectures that do not follow human intuition yet outperform the state-of-the-art model.

04/2016 - 11/2016	**Research Assistant**, *Kreiman Lab, Harvard Medical School* Research at the bridge of machine learning, neuroscience and cognitive science with a focus on the role of recurrent connections. We improved object recognition performance on occluded objects from 45% with Alexnet to 74% with our models and offered a first possible application of recurrency in the human brain. We are also investigating the robustness of deep convolutional networks and the role of context for object recognition
12/2015 - 04/2016	**Research Assistant**, *Oracle Labs* Enabled research teams to flexibly utilize the Oracle RDBMS on the internal cluster by developing an on-demand database module
07/2015 - 10/2015	**Software Engineering Intern**, *Siemens AG* Architectural concept and development of a behavior-driven testing framework that can run a test specification written in natural language and that is now used in three major business areas
07/2012 - 12/2015	**Freelancer**, *Martin Schrimpf Software Solutions* Software Development and Services - projects include: *Greimel IT-Systemhaus GmbH* Led the development of a Document Management System including optical character recognition (OCR), a financial accounting interface and a dynamic workflow and process management system which made the client company effectively paper-free *Promonde JLT* Implemented an advertisement website for Arabic countries with over 10,000 users per day

Publications

2017	Schrimpf, M., Merity, S. & Socher, R. A Flexible Approach to Automated RNN Architecture Generation. *submitted*
2017	Cheney*, N., Schrimpf*, M. & Kreiman, G. On the Robustness of Convolutional Neural Networks to Internal Architecture and Weight Perturbations. *arXiv preprint.* arXiv: `1703.08245 [cs.AI]`
2017	Tang*, H., Schrimpf*, M., Lotter*, B., Moerman, C., Paredes, A., Caro, J. O., Hardesty, W., Cox, D. & Kreiman, G. Recurrent computations for pattern completion. *submitted*
2014	Schrimpf, M. *Scalable Database Concurrency Control using Transactional Memory* Bachelor's Thesis (Technical University Munich)

Presentations

12/2016	*Brains & Bits, NIPS Workshops* Recurrent computations for pattern completion
10/2016	*Systems Club, Harvard Medical School* Recurrent computations for pattern completion

Awards

2017	**Social Impact Award (Integreat)**, *TUM School of Management*
2016	**FITweltweit**, *DAAD German Academic Exchange Service*
2016	**Teilstipendium**, *University Augsburg*
2016	**Integrationspreis (Integreat)**, *Government of Swabia*
2016	**Winner Social Society (Integreat)**, *Idea- and Startup-competition Generation-D*
2015	**Deutschlandstipendium**, *Federal Ministry for Education and Research, Roland und Ute Lacher Fonds*
2014	**Ministeriumsstipendium**, *Bavarian State Ministry for Education, Science and the Arts*
2013 - 2016	**e-fellows.net scholarship**

Extracurricular Activities

02/2016	**Artificial Intelligence Workshop** Organized a two-day workshop on Neural Networks, Machine Learning and Organic Computing. The speakers were Prof. Günther Palm, PD Rolf Würtz and Dr. Joschka Bödecker
Since 08/2015	**Co-Founder and Technical Lead**, *Integreat* Platform to deliver information from local authorities and helper organizations to refugees in over 80 German cities. Implementation of the administration backend and a cross-platform app, coordination of the development community
2015 - 2016	**MINGA Mentor for International Students**, *TU Munich*
2013 - 2016	**Rotaract Club München Residenz** Youth club of Rotary: community, helping and learning. Social initiatives, e.g. with our orphanage sponsorship

Languages

German
Native proficiency
English
Full professional proficiency
Japanese
Elementary proficiency
French
Elementary proficiency

Interests

Travelling
Insights into various cultures in places such as Africa, Australia and India
Martial Arts

Sporty balance, perfection of techniques and meditation with Judo and Shaolin
Brain-inspired Computing
Getting behind the concepts of cognition and intelligence on the basis of biological findings, side projects in e.g. deep reinforcement learning and home automation

Mentored Students

Fall 2016	**Jacklyn Sarette**, *Emmanuel College* Behavioral experiments on visual context
Fall 2016	**Doré de Morsier**, *ETH Zurich* Behavioral experiments on the recognition of novel objects
Summer 2016	**Wendy Fernandez**, *City University of New York* Behavioral experiments and data analysis on the identification of occluded objects (MIT Summer Research Program)

References

Prof. Gabriel Kreiman, PhD, *Children's Hospital Boston, Harvard Medical School*
Prof. Dr. Helmut Krcmar, *Computer science in economics, Technical University Munich*
Prof. Dr. Alexander Knapp, *Software and Systems Engineering, Augsburg University*