

Markus Gruber, MSc

SOFTWARE ENGINEER · RESEARCHER

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Education

University of Vienna

MASTER, SCIENTIFIC COMPUTING

Vienna, Austria

10/2013 - 06/2017

- Thesis: "Experimental Studies of the Influence of Silent Data Corruption on the FT-GMRES" (<http://othes.univie.ac.at/46244/>)
- Supervisor: Prof. Dr. techn. Wilfried Gansterer

University of Applied Sciences Sankt Pölten

BACHELOR, INDUSTRIAL SIMULATION

Sankt Pölten, Austria

09/2010 - 06/2013

- Thesis: "Simulation of nano composite materials"
- Supervisor: FH-Prof. Dr. techn. Thomas Schrefl

Technical University of Vienna

DIPLOMA, MATHEMATICS

Vienna, Austria

10/2005 - 03/2006

- Without graduation.

Higher Technical School

GENERAL QUALIFICATION FOR UNIVERSITY ENTRANCE

Sankt Pölten, Austria

09/1999 - 06/2004

- Electrical engineering and industrial power electronics (major).

Work Experience

Eyyes

SOFTWARE ENGINEER & C/C++ - PROGRAMMER

Krems, Austria

04/2017 - open

- Projects related to road safety.
- Development of concepts for autonomous driving and computer vision.
- Application and adaption of deep learning algorithms.
- Research work on image processing and its corresponding implementation.
- Experience with Yolo (mainly used for object detection) and different tools like Keras and Tensorflow.

Solkav Alternative Energiesysteme GmbH

AUTOMATION TECHNICIAN

Sankt Pölten, Austria

01/2010 - 06/2010

- Programming and planning of controls for solar systems.
- Selection of the corresponding automation system.
- Concept creation and project works.

OK-Automation

AUTOMATION TECHNICIAN

Sankt Pölten, Austria

10/2008 - 12/2009

- Programming and planning of control systems.
- Simulation of the power plant process.
- Testing of control systems using self written models (with Simit from Siemens).
- Writing of operation manuals for the power plant process.
- Programming of visualizations.

SEIKO FLOW CONTROL

TECHNICAL DRAWER

Stockerau, Austria

09/2007 - 08/2008

- Writting of manuals and drafts for the manufacturing of flow rate measuringing pipes.
- Processing of pipeline constructions.
- Creating of drafts and manuals for consumers and manufacturing (AutoCAD 2005).
- Creating of sweat and test plans.

Frühauf

AUTOMATION TECHNICIAN

Sankt Pölten, Austria

09/2006 - 08/2007

- General control cabinet construction.
- Wiring of switch cabinet in the area of energy technology.
- Automation of hydroelectric power stations, waste incineration plants and trafo stations.

Red Cross

COMMUNITY SERVICE

Sankt Pölten, Austria

10/2004 - 09/2005

- Medical corps.

Data Structures

Languages

PROGRAMMING & SCRIPTING

- Excellent knowledge of C/C++, Python, Bash and R.

Software Engineering

C++ 11/14/17 (AND BEYOND)

- Familiar with different editors and IDEs like Qt, VIM and Visual Studio.
- Safe handling of the Standard Template (STL) and Boost-library.
- Experience with analysis and optimization of performance critical sections.
- Experience in functional programming (fup).
- Experience in object oriented programming (oop).
- Excellent knowledge of the GNU Debugger (GDB).
- Experience in parallelization of software.

Optimization

COMPILER

- Experience with different compilers like gcc (gnu c compiler), icc (intel c compiler) and msvc (microsoft visual c compiler) as well as with code optimization through compiler flags and finding performance critical sections.

Management

GIT, GERRIT, MERCURIAL

- Very safe handling of Git and the code-review-system Gerrit.
- Experience with Mercurial for version control of software.

Documentation

DOXYGEN & MARKDOWN

- Familiar with different documentation tools like Doxygen and Markdown.
- Experience in UML (Unified Modeling Language).

Visualization

GUIs

- Excellent knowledge of Qt5/QML for realization of user-interfaces from mobil devices and desktop systems.
- Development of rudimentary and advanced graphical interfaces.

Data Processing

High Performance Computing

DISTRIBUTED & SHARED MEMORY

- Familiar with different APIs in high performance computing (HPC).
- Knowledge of MPI, OpenMP, TBB, Cilk, OpenCL, CUDA.
- SIMD programming up to SSE/AVX/AVX2 and programming on GPUs.

Machine Learning

R & PYTHON

- Knowledge of data mining and pattern recognition methods (support vector machines, ensemble methods, dimension reduction, cluster analysis,...).
- Combinatorics and probability theory.
- A lot of work experience with OpenCV (Open Source Computer Vision Library).

Deep Learning

KERAS, TENSORFLOW, PYTORCH, CAFFEE, CNTK, YOLO

- Experience with different deep learning libraries for classification and object detection.
- Training and optimization of different Deep Neural Networks (DNNs).
- Experience with the export of DNNs and as well further processing.
- Proficient in solving problems related to computer vision and deep learning.

Numerics

MATLAB/OCTAVE

- Excellent knowledge of solving differential equation systems.
- Good knowledge of MPI and LAPACK/BLAS.
- Experienced in using different libraries like BLAS, cuBlas, Magma.

System Administration

APTITUDE/SYSTEMCTL

- Excellent knowledge of Debian based systems, including package management.
- Command line usage (for the creation of scripts), updates & monitoring.

Databases

SQL

- Good knowledge of SQL databases.
- Experienced in the creation of databases.

Digital skills

- Tools** Word processing (word), spreadsheets (excel), presentations (power point).
- General** Literature research, digital media, operating systems.

Languages

- German** Native language.
- English** Fluent (written & spoken).

Communication skills

- Communication technique** Good.
- Presentation technique** Good.
- Networking skills** Excellent.
- Conflict competence** Excellent.

Organizational and managerial talent

- Teamwork** Enjoy working in a team and interdisciplinary.
- Leadership qualities** Like allocation of employees and of different jobs.
- Way of working** Structured and clear.
- Resilience** Resistant to stress even in demanding situations.

Interests

- Sports** Snowboarding, swimming, running, biking.
- Leisure** Reading (mainly specialist literature), cinema, hiking, travelling.