Curriculum Vitae

Philipp Braun

Date of Birth: 12 November 1985
Place of Birth: Neumarkt i.d.Opf
Nationality: German (EU citizenship)

Address: Marienroggenweg 51, 18147 Rostock

Phone: +49 176 63651644
Email: braunp@in.tum.de

Education

Oct 2011 - Sep 2013 (expected) — **M.Sc., Applied & Engineering Physics** — Technische Universität München
Laurea Magistrale., Materials Science — University of Turin
Master 2, Chemistry — University of Montpellier 2
Erasmus Mundus Master programme Materials Science Exploring Large Scale Facilities (MaMaSELF) leading to a triple degree | Detailed List of Exams

Oct 2009 - Sep 2012 — **B.Sc., Informatics** — Technische Universität München
Application Area: Physics
GPA: 1.8, Thesis title: "Probe position refinement in X-ray ptychography"
Advisor: Prof. Thomas Huckle (TUM Informatics), Pierre Thibault, PhD. (TUM Physics) | Detailed List of Exams

Oct 2008 - Sep 2011 — **B.Sc., Physics** — Technische Universität München
Specialization Area: Condensed Matter Physics
GPA: 2.2, Thesis title: "Development and analysis of a momentum spectrometer for charged particles emitted after the photo double ionization of ethyne and ethylene" | Detailed List of Exams
Advisor: Dr. Thorsten Weber (LBNL), Prof. Peter Müller-Buschbaum (TUM)

Apr 2006 - Mar 2008 — **Associate Engineer, Computer Systems and Automation** — Siemens Technik Akademie Erlangen, Germany
GPA: 1.0 | Detailed List of Exams

May 2005 — **Abitur**, — Melanchthon Gymnasium Nuremberg, Germany
GPA: 1.4

Work Experience

Jul 2012 - Sep 2012 — Research Intern — Coherent Imaging Division, CFEL, DESY Hamburg, Germany
Coherent Imaging with FELs
Participant in the DESY Summer Programme. 3D phase retrieval algorithms. Binary classification of single-particle diffraction patterns from FELs. Advisor: Anton Barty

Jul 2011 - Sep 2011 — Research Intern — AMOS Group, Lawrence Berkeley National Laboratory Berkeley, U.S.
Atomic and Molecular Physics
Participant in the DAAD RISE programme. Development, simulation and resolution analysis of a 3D momentum spectrometer for charged particles emitted after the photo double ionization of ethyne and ethylene. Help with setup of the experiment at beamline 10.0.1 of the Advanced Light Source. Advisor: Thorsten Weber

Oct 2008 - Nov 2009 — Software Engineer — Interasco GmbH Munich, Germany
IT Solutions and Services
Helped defining the architecture for a newly started long term project. Developed an easy to use multithreading framework. Coached the team in using the framework and provided thorough documentation.

Apr 2008 - Oct 2008 — Junior Developer — Swinton Collonade Ltd. Manchester, U.K.
Insurance and Financial Services
Developed enterprise scale object oriented web applications. Developed website frontend with javascript, DHTML, webservices. Monitored website performance and troubleshot defects out of regular working hours.

Oct 2007 - Mar 2008 — Software Developer Intern — Siemens Standard Drives Congleton, U.K.
Manufacturing & Automation
Developed an application to streamline tracking of defective circuit boards and increase item throughput in the adjoining factory. Developed an application to automate a small assembly line.

Computer Skills

Programming:	web pages (Expert),Windows applications (Expert), Qt (Basic) Database Design (Expert)
Programming Languages:	C# (Expert), Visual Basic (Expert), C/C++ (Expert) SML (Intermediate), SQL (Intermediate), Perl (Basic), HTML (Intermediate), Python (Intermediate)
Computer Algebra Programs:	Mathematica (Intermediate)
Operating Systems:	Windows (Expert), Linux (Intermediate)
Office:	LaTeX, Office-Suite

Lab experience

Basic lab course 1	- Oscillations and chaos - Capillary viscosimeter - Determination of molar mass - Constitutive equation of real gases - Determination of sonic velocity - Dissociation and freezing point depression of KNO_3
Basic lab course 2	- Determination of electron charge - Bridge circuit - Creation of ultra high vacuum, measurement of vacuum pressure - Measurement of transmission curves on the oscilloscope - Characteristic lines of transistors - fuel cell characteristics
Basic lab course 3	- measurement and handling of radioactive materials - measurement of electromagnetic fields - diffraction and refraction of light - X-rays: characteristic and continuous spectrum, generation - geometrical optics: lenses, lense systems, principal plane, autocollimation, focal distance - Franck-Hertz-Experiment
Advanced lab course	- x-ray fluorescence spectrometry - atomic force microscopy - molecular motors. fluorescence microscopy - plasma interferometry, He-Ne lasers, laser resonator, Fabry-Perot-interferometer - organic photovoltaic cells - surface plasmons - Mössbauer Effect - Lasers and nonlinear optics - Fourier transform holography
Bachelor Thesis	- synchrotron radiation - 3rd generation synchrotrons

Military Service

Jul 2005 - Mar 2006	Private First class at German Airforce, Landsberg a. Lech *Air raid defences*

Languages

English:	Fluent
Spanish:	C1 Level
Italian:	A2 Level
French:	A1 Level

Interests and Activities

Technology, Philosophy of Science, University Choir, Programming, Travelling

MaMaSELF programme

Grades

Exam	Grade	Credits
Courses at TUM WS11 & SS12		
Advanced Lab Course for Master Students	pass	5
Advanced Theoretical Physics	2,3	10
Modern X-Ray Physics 1	1,7	5
Seminar: Modern X-Ray physics	pass	4
Physics with Neutrons 2	2,0	5
Quantum Optics 1	1,7	5
Quantum Optics 2	1,3	5
Nonlinear Dynamics and Complex Systems 1	2,0	5
Introduction to Software Engineering	1,3	6
Machine Learning I	1,7	6
Italian A1.1 + A1.2	2,7	6
Exploring Condensed Matter with photons: atomic structure, electron states and dynamics	1,3	5
Additional courses		
Italian A2.1+A2.2	2,7	6
Physics with Neutrons 1	2,3	5
Ultracold Quantum Gases 1	2,3	5
Ultracold Quantum Gases 2	3,0	5
Plasmonics: Fundamentals and Applications	2,3	5
Courses at University of Turin WS12		
Organic Materials with Lab	30/30	6
Selection and use of materials	Jan 2013	6
Advanced Crystallography	28/30	6

B.Sc. in Computer Science

Grades

Semester	Exam	Grade	Credit Hrs
Winter 08	Lab Course Part 1	passed	5
	Experimental Physics 1	3,3	9
	Introduction to Informatics 1	1,7	6
	Fundamentals of Programming (Exercises & Laboratory)	1,7	6
	Introduction to Computer Organization and Technology - Computer Architecture	2,3	8
	Discrete Structures	3,3	8
	Linear Algebra for Informatics	1,0	8
Summer 10	Intercultural Aspects of Working in Global Teams	1,0	4
	Basic theoretic informatics	2,7	8
	Fundamentals of Databases	2,0	6
	Discrete Probability Theory	2	8
	Fundamentals of Algorithms and Data Structures	2,0	6
Winter 10	Introduction to Informatics 2	2,0	6
	Basic Principles: Operating Systems and System Software	2,3	6
	Lab: Computer Organization and Computer Architecture	1,0	8
	Analysis for Informatics	1,7	8
	SET Tutor	passed	2
	Theoretical Physics 4 (Thermodynamics & Statistical Physics)	1,7	9
	Numerical Programming	2,0	6
Summer 11	Introduction to Software Engineering	1,3	6
	Introduction to computer networking and distributed systems	2	6
	Seminar Course: History of Computational Science, Vision, and Medical Science	1,3	4
	Seminar Course: Inside Google - Algorithms for (social) networks	3,0	4
Winter 11	Fundamentals of Artificial Intelligence	3,3	5
	Machine Learning I	1,7	6
	Workshop: Feasibility and its consequences	1,0	1
	Programming Lab: Lego Mindstorms	1,7	10
	Seminar: What is space?	1,7	2
Summer 12	Bachelor Thesis	1,0	12
	Bachelor Colloquium	1,0	3
	Total (weighted)	1.8	185

B.Sc. in Physics

Grades

Semester	Exam	Grade	Credit Hrs
Winter 08	Experimental Physics 1	3,3	9
	Mathematics for Physicists 1	1,0	8
	Mathematics for Physicists 2	3,7	8
	Lab Course Part 1	passed	5
	Spanish Course B2	1,7	4
Summer 09	Theoretical Physics 1 (Classical Mechanics)	3,0	8
	Experimental Physics 2	3,7	9
	Mathematics for Physicists 3	3,0	8
	Lab Course Part 2	passed	5
Winter 09	Experimental Physics 3	3,3	8
	Theoretical Physics 2 (Electrodynamics)	3,3	8
	Introduction to Scientific Programming	passed	4
	Lab Course Part 3	passed	5
	Introduction to current topics in scientific research	passed	2
	Mathematics for Physicists 4	2,7	8
Summer 10	Experimental Physics 4	3,0	8
	Theoretical Physics 3 (Quantum Mechanics I)	2,3	9
	Chemistry for Physicists	2,0	6
Winter 10	Quantum Mechanics II	3,3	8
	Condensed Matter Physics I	1,7	9
	Theoretical Physics 4 (Thermodynamics & Statistical Physics)	1,7	9
	Introduction to Nuclear, Particle and Astrophysics	2,3	8
	Advanced Lab Course	passed	6
Summer 11	Condensed Matter Physics II	1,3	9
	Bachelor Thesis Physics	1,3	12
	Seminar Spin Mechanics and Spin Dynamics	passed	4
	Bachelor Colloquium Physics	1,3	3
	Total (weighted)	2.2	189

Associate Engineer in Computer Systems and Automation

Grades

Exam	Grade
Mathematics	**1.0**
Electrical Engineering	**1.0**
Software Engineering	**1.0**
Methods of Software Engineering	1.3
Object oriented software engineering	1.0
Object oriented user interface programming	2.0
C and C++ programming languages	2.0
Design Patterns	1.0
Operating Systems and Network Programming	**1.0**
Fundamentals of operating systems	1.7
Real time operating systems	1.0
Web site programming	1.0
Network architecture and protocols	2.0
Computer Organization and Technology - Computer Architecture	**1.3**
Digital signal processing	2.0
Microcomputer systems	1.0
Algorithms and Data structures	1.3
Control engineering	2.0
Feedback control systems	1.7
Relational Databases	**1.7**
English	**1.0**
Practical Semester	**1.0**
Gpa	**1.0**