C U R R I C U L U M V I T A E

BERNHARD BUCHHOLZ

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„Strong theoretical background with extensive hands-on experience“

Born on 26. April 1985
in Ellwangen (Jagst), Germany

E M P L O Y M E N T

11/2021 – Present

Director & Interim Manager – Focus on Operations
AURELIUS GROUP (Jun 22 – present) **& other Private Equity Investors**

- Danger detection system installing Buy&Build Company: Currently 15 locations & 500 HC
  Operative stabilization of (inorganic) growth, future management placement, support-function built-up, ERP & IT roll-out, controlling processes & KPIs introduction, brand unification, change management, M&A activities, PMIs
- Distressed turnaround & subsequent integration (Buy&Build) of ~80 HC German electrical installing company as interim CRO
  Transparency & root cause analysis, liquidity crisis handling, forensic accounting, stakeholder crisis management, customer claim crisis handling, field execution built-up, new (leadership) team placement for post crisis transistion, carve-out & merger
- R&D optimization program for acquired business unit of int. cooperation (~120 FTE in R&D)
- Due Diligence & holistic negotiations for own MBI as CEO of German 13MM rev., 55 HC company *– resulted after execution in subsequent exit decision*

03/2018 – 11/2021

Project & Engagement Manager Strategy Consulting, Siemens Management Consulting (SMC)
Siemens AG, SMC recently renamed to Siemens Advanta Consulting (SAC)

- Fast-lane career progression – every 6-month evaluation cycle in top-performance corridor
  - From Consultant, Senior Consultant, Junior Project Manager to Project Manager in 2.5 years
- Led project teams of consultants and clients (up to 50 members) for Siemens and other mid- to large-sized companies to develop strategies and to ensure subsequent implementation
- Selected projects:
  - Cooperate productivity program: back office & support functions for ~2000 FTE
  - Restructuring of German manufacturer: Large factory network consolidation of ~5000 FTE
  - Turnaround at Energy player: Strategic turnaround to compensate roughly 300MM loss at 2Bn topline incl. measure development and tracking setup
  - Manufacturing Ramp-up: Ramp-up for electric aircraft motor manufacturing
  - Startup ramp-up: Strategy incl. portfolio definition & minimal setup for system integrator & consulting unit in decarbonization environment
  - IoT strategy for digital grid provider: Use case identification & piloting, M&A screening
  - IoT offering productification of Service player: Offering definition, market assessment, operating model, monetarization logic, competitor landscape and G2M
  - Digital transformation at major O&G player: Identification of business levers and digital business case evaluation for digital twin extensions
  - Portfolio extension at Energy player: Market assessment, use case vs. technology mapping, competitive landscape incl. organizational setup

10/2010 – 02/2018
(excl. Princeton stay)

Product Owner & Project Manager, German National Metrology Institute (PTB)
Department 3.2 "Analytics and Thermodynamic State Behavior of Gases" (Prof. Volker Ebert)
PTB: Physikalisch-Technische Bundesanstalt

- Key areas:
  - Product owner "Traceable, airborne laser-hygrometry": Conception, development, validation, and aircraft certification (EASA Form 1) for a novel family of traceable, high-speed spectrometers – incl. funding, budgeting, external stakeholder management, leading internal cross-disciplinary team, and external communication. Active participation in 8 international scientific campaigns (flight time > 350h) without any instrument downtime.
  - Project management: Coordination of ~10 third-party funded projects (1-2MM) focusing on new traceable spectroscopic developments & advancements in Metrology for climate-relevant variables; leading collaborations with DLR, KIT, FZJ Jülich, TU Darmstadt, Princeton University.
  - Instrument development: Hands-on developments such as (opto-)mechanical and electrical design, electronic board (PCB) development, control & evaluation software coding, data analysis & certification documentation – incl. metrological validation at national primary standards.
  - Scientific research: 6 peer-reviewed papers, 19 talks, 18 other scientific publications, 1 PhD Thesis
  - Patents: 2 granted patent applications: Zero detector setup & Fiber feedthrough

01/2016 – 01/2017 **Invited Visiting Research Associate**, **Princeton University (USA)**
Department of Civil and Environmental Engineering (Prof. Mark A. Zondlo)
· Key areas:
- *Project management:* *Operatively steered and consulted on various running projects during Prof. Zondlo`s sabbatical leave*
- *Senior instrument advisor:* *Metrologically improved field instruments for monitoring of fracking and conventional gas well pads: Focus hardware & electronics*
- *Scientific research:* *Evaluated scientific data and published 2 peer-reviewed papers as first author*

11/2002 – Present **Freelance consultant, Consulting and Services for Startups & Microbusinesses**
· Provided basic installations and hosting of websites as well as server-based (web-) services
· Managed commercial rental properties; led contract negotiations & refurbishments
· Consulted small businesses to optimize their operational processes incl. ERP introductions
e.g., Driving & Boat School: www.Toms-Driving-School.de (2004 – Present, focus: expansion, profitability)
e.g., CFD focused services for Yachts: www.streamandlines.com (2021 – Present, focus: ramp-up, contracting)

07/2002 – Present **Founder and Owner, Enterprise TCB-Versand Buchholz**
· Specialized retailer for mainly radio-controlled model building (partly sold 09/2010)
· Developed, adapted, and consulted customers on special electronic solutions

E D U C A T I O N

10/2010 – 07/2014 **Technische Universität Darmstadt,** PhD study in Department of Mechanical Engineering
Thesis: Development, primary validation and field deployment of novel calibration-free laser hygrometer for research aircraft
Degree: **Doctor rerum naturalium** (equal to Ph.D. in Physics)
(Final grade: 1.0 “summa cum laude” – with highest honor)

03/2010 – 08/2013 **FernUniversität in Hagen,** Bachelor degree course, Business Informatics
Thesis: Tax compliance – a micro-economic analysis
Degree: **Bachelor of Science**
(Final grade: 1.5 – excellent, ranking position in FU Hagen 15-year average: ≤ 4.8%)

10/2007 – 02/2013 **FernUniversität in Hagen**, Bachelor degree course, Business Administration and Economics
Thesis: Streaming media regarding the German copyright
Degree: **Bachelor of Science**
(Final grade: 1.5 – excellent, ranking position in FU Hagen 15-year average: ≤ 2%)

03/2007 – 09/2010 **Universität Heidelberg**, Diplom studies, Physics
Thesis: New hard- and software developments for autonomous, compact and lightweight field diode laser hygrometer
Degree: **Diplom** (comparable to a Master of Science degree)
(Final grade: 1.0 “mit Auszeichung” – with highest honor)

03/2005 – 03/2007 **Universität Heidelberg**, Diplom study, Physics
Certificate: **Vordiplom** (comp. to a Bachelor of Science degree, final grade: 1.4 – excellent)

07/2004 – 02/2005 **Basic Military Service** (mandatory), Gebirgssanitätsregiment 42 "Allgäu"

09/1995 – 07/2004 **Peutinger-Gymnasium Ellwangen**, High school studies
Certificate: **Abitur** (German high school certificate, final grade: 1.3 – excellent)

P R I Z E S A N D A W A R D S

04/2015 Publication
CITAC Best Paper Award for 2014
Buchholz et al., “Absolute validation of a diode laser hygrometer via inter-comparison with the German national primary water vapor standard”, Applied Physics B (2014)

12/2014 PhD Thesis
Award of the Helmholtz-Fond 2014

02/2005	Military service "Förmliche Anerkennung wegen vorbildlicher Pflichterfüllung" (German military award)
07/2004	Abitur Ferry-Porsche prize of "Dr. Ing. h.c. F. Porsche AG" Book and membership prize of the "Deutschen Physikalischen Gesellschaft e.V." Economics prize of the "Freunde Ellwanger Gymnasien e.V."

ADDITIONAL SKILLS AND INTERESTS

Languages	German: native speaker, English: business proficient in writing and speaking
Stays Abroad	Brazil (3 months), USA (26 months in total)
Computer literacy	LabVIEW (National Instruments), EAGLE (CadSoft), Python, Ubuntu (Linux) Expert knowledge, longer than five years of professional experience MS-Word, MS-PowerPoint, MS-Excel, Origin, SQL, C (AVR-specific) Very good knowledge MATLAB, PHP, HTML, JavaScript, Assembler Basic knowledge
Practical Skills	Longtime interests and high curiosity for technical processes and their optimization Very good knowledge and practical experience with manufacturing and improving of electronic and mechanical apparatuses up to rebuilt (gutting) of rental buildings
Non-Profit Engagements	Integrative linking of social groups e.g.: 2016: Co-led and established the PostDoc Council at Princeton University as a recognized entity with budget. 2011 – 2015: Established social group "Newcomers to Braunschweig" with ~500 members

PATENTS AND PUBLICATIONS

Patents	"Detektoranordnung und Spektroskop" B. Buchholz and V. Ebert German Patent and Trade Mark Office: DE 10 2014 200 627 A1 2015.07.16 Describes an optical fiber-to-detector coupling setup for quantification of parasitic absorption in fiber laser systems. "Durchführung einer Leitung" B. Buchholz and V. Ebert German Patent and Trade Mark Office: DE 10 2014 200 629 A1 2015.07.16 Describes a compact, adjustable, strain-relieved, vacuum feedthrough for highly sensitive materials such as optical fibers.
Selected peer-reviewed journal publications as **first author**	SEALDH-II – a calibration-free transfer standard for airborne water vapor measurements: Pressure dependent absolute validation from 5–1200 ppmv at a metrological humidity generator Atmospheric Measurement Techniques Discussions, (2017), DOI: 10.5194/amt-2016-413 HAI – a new airborne, absolute, twin dual-channel, multi-phase TDLAS-hygrometer: background, design, setup, and first flight data Atmospheric Measurement Techniques, 7, 10, 35–57, (2016), DOI: 10.5194/amt-10-35-2017 Optical pressure sensing on fast aircrafts using TDLAS Atmospheric Measurement Techniques, 7, 3653-3666, (2014), DOI: 10.5194/amt-7-3653-2014