Curriculum Vitae

ALEXANDER MÜTZE

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Academic Positions

09/2018 – present	Research Associate *Main areas of activity* • Working on research projects (German Research Foundation: Project 409759709 & 434659386) • Execution of contract research projects • Further development of the IFA Learning Factory and Trainer for Production Planning and Control Courses • Holding of university course exercises Institute of Production Systems and Logistics Leibniz University Hannover, Germany

Academic Education

09/2018 – present	Ph.D. Candidate "Quantitative Modelling of the Logistical Impact of Order Release Methods" |Advisor: Prof. Dr.-Ing. habil. Peter Nyhuis Leibniz University Hannover, Germany
10/2016 – 08/2018	Master of Science (M.Sc.) in Engineering and Business Administration (graded *very good*), Specialisation: Production Engineering and Operations Management, Leibniz University Hannover, Germany, Thesis: *Simulation Based Examination of PPC Procedures* (*very good*)
10/2013 – 09/2016	Bachelor of Science (B.Sc.) in Engineering and Business Administration (graded *good*)KGG, Specialisation: Production Engineering, Leibniz University Hannover, Germany Thesis: *Concept Development in Implementing a Digital Job Order Card into a Production Training Workshop (very good)*
06/2013	Abitur (university entrance qualification) (graded *very good*) Theodor-Heuss-Gymnasium Wolfenbüttel, Germany

Publications

Reviewed Articles

Hillnhagen, S., Koller, S.-H., **Mütze, A.**, Nyhuis, P., & Schmidt, M. (2022). PPC Task Plan Sourcing - Synchronization of Procurement and Production. A Model-based Observation. *Conference on Production Systems and Logistics (CPSL 2022)*. publish-Ing. https://doi.org/10.15488/12121

Mütze, A., Lange, L., Wenzel, A., & Nyhuis, P. (2022). Challenges in Combining Real-Time Locating Systems and Automated Guided Vehicles to Facilitate Transformable Production Systems. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.4071957 (Proceedings of the Conference on Learning Factories (CLF) 2022).

Mütze, A., Lucht, T., & Nyhuis, P. (2022). Logistics-Oriented Production Configuration Using the Example of MRO Service Providers. *IEEE Access*, 10, 20328-20344. https://doi.org/10.1109/ACCESS.2022.3146420

Hillnhagen, S., Green, T., Maier, J.T., **Mütze, A.**, & Schmidt, M. (2021). Wirkzusammenhänge innerhalb der Produktionsplanung und -steuerung. Ein Ansatz zur generischen Modellierung der Zusammenhänge zwischen Aufgaben der Produktionsplanung und -steuerung und produktionslogistischen Zielgrößen. [Interdependencies within production planning and control. An approach for generic modelling of the relationships between production planning and control tasks and production logistics objectives] *ZWF Zeitschrift Für Wirtschaftlichen Fabrikbetrieb*, *116*(12), 889–894. https://doi.org/10.1515/zwf-2021-0221

Kuprat, V.K., Demke, T.M., **Mütze, A.**, & Nyhuis, P. (2021). Monetäre Bewertung prozessualer Innovationen. Ansatz zur monetären ex ante Bewertung von Auswirkungen prozessualer Innovationen auf das Produktionssystem. [Monetary Evaluation of Process Innovations. Approach for the monetary ex ante evaluation of the effects of process innovations on the production system] *ZWF Zeitschrift Für Wirtschaftlichen Fabrikbetrieb*, 116(12), 860-865. https://doi.org/10.1515/zwf-2021-0225

Hillnhagen, S., **Mütze, A.**, Nyhuis, P., & Schmidt, M. (2021). Linked Accomplishment Of Order Management and Production Planning and Control. An Integrated Model-based Approach. *Proceedings of the 2nd Conference on Production Systems and Logistics (CPSL 2021)*. publish-Ing. https://doi.org/10.15488/11297

Lucht, T., **Mütze, A.**, Kämpfer, T., & Nyhuis, P. (2021). Model-Based Approach for Assessing Planning Quality in Production Logistics. IEEE Access, 9, 115077-115089. https://10.1109/ACCESS.2021.3104717

Mütze, A., Hingst, L., Rochow, N. E., Miebach, T., & Nyhuis, P. (2021). Use Cases of Real-Time Locating Systems for Factory Planning and Production Monitoring. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.3857878 (Proceedings of the Conference on Learning Factories (CLF) 2021).

Mütze, A., Hillnhagen, S., Schäfers, P., Schmidt, M., & Nyhuis, P. (2020). Why a systematic Investigation of Production Planning and Control Procedures is needed for the target-oriented Configuration of PPC. In *2020 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*. https://doi.org/10.1109/IEEM45057.2020.9309885

Mütze, A., & Nyhuis, P. (2020). Deriving of Sequencing Strategies for Multi-Stage Productions Supported by Logistic Models and Software Tools. In P. Nyhuis, D. Herberger, & M. Hübner (Eds.), *Proceedings of the 1st Conference on Production Systems and Logistics (CPSL 2020).* publish-Ing. https://doi.org/10.15488/9661

Schäfers, P., **Mütze, A.**, & Nyhuis, P. (2019). Digital Production Order Processing Support System Using Real Time Data. In D. Dimitrov, D. Hagedorn-Hansen, & K. von Leipzig (Chairs), *International Conference on Competitive Manufacturing (COMA 19) Proceedings*. https://www.researchgate.net/publication/331398861

Schäfers, P., **Mütze, A.**, & Nyhuis, P. (2019). Integrated Concept for Acquisition and Utilization of Production Feedback Data to Support Production Planning and Control in the Age of Digitalization. *Procedia Manufacturing*, *31*, 225–231. https://doi.org/10.1016/j.promfg.2019.03.036

Seitz, M., Mayer, J., **Mütze, A.**, & Nyhuis, P. (2019). Produktivität versus Termintreue: Logistikorientierte Auftragsreihenfolgebildung für mehrstufige Produktionsprozesse [Productivity versus adherence to schedules: Logistics-oriented order sequencing for multi-stage production processes]. *Wt Werkstattstechnik Online*, *109*(4), 204–208. https://doi.org/10.37544/1436-4980-2019-04-4

Seitz, M., **Mütze, A.**, & Nyhuis, P. (2019). Produktionssteuerung von komplexen Materialflüssen: Berücksichtigung von Wechselwirkungseffekten zur Erreichung einer hohen logistischen Leistungsfähigkeit [Production control of complex material flows: Consideration of interaction effects to achieve high logistical performance]. *ZWF Zeitschrift Für Wirtschaftlichen Fabrikbetrieb*, *114*(12), 828–834. https://doi.org/10.3139/104.112211

Chapters in edited volumes and other outlets

Nyhuis, P., Rochow, N. E., **Mütze, A.**, & Hingst, L. (2019). Planung, Gestaltung und Steuerung effizienter Produktionssysteme begreifen - Das interaktive und modulare Schulungskonzept der IFA-Lernfabrik [Understanding planning, design and control of efficient production systems - The interactive and modular training concept of the IFA Learning Factory]. In D. Spath & B. Spanner-Ulmer (Eds.), *Schriftenreihe der Wissenschaftlichen Gesellschaft für Arbeits- und Betriebsorganisation. Digitale Transformation - gutes Arbeiten und Qualifizierung aktiv gestalten* (pp. 205–220). GITO. https://doi.org/10.30844/wgab_2019

Articles currently under review or in publication process

Mütze, A., Lebbing, S., Hillnhagen, S., Schmidt, M., & Nyhuis, P. (2022). Modeling Interactions and Dependencies in PPC - An Approach to a Holistic Description. *International Conference on Competitive Manufacturing (COMA 22)*. Manuscript accepted.

Demke, T.M., **Mütze, A.**, & Nyhuis, P. (2022). Production Controlling Governance to Ensure Homogenous Information Systems and Targeted Decision-Making Processes. *International Conference on Competitive Manufacturing (COMA 22)*. Manuscript accepted.

Mütze, A., Hillnhagen, S., Schmidt, M. & Nyhuis, P. (2022). Modelling Interdependencies within Production Planning and Control: An Application-Motivated Approach. In: *IFIP Advances in Information and Communication Technology. Advances in Production Management Systems (APMS) 2022.* Manuscript accepted.

Mütze, A., & Lebbing, S. (2022). Setup-optimised dispatching at work systems with pallet changers. Manufacturing Letters. Under Review

Mütze, A., Hingst, L., Wecken, L., Ast, J., Möhle, J. & Bleckmann, M. (2022). Kapitel. 5.1 - Grundlagen der Konzeptplanung [Chapter. 5.1 Fundamentals of concept planning]. In H.-P. Wiendahl, J. Reichardt & P. Nyhuis (Eds.), *Handbuch Fabrikplanung. Konzept, Gestaltung und Umsetzung wandlungsfähiger Produktionsstätten.* Hanser. Under Review.

Mütze, A., Hingst, L., Ast, J. & Möhle, J. (2022). Kapitel. 6.1 - Grundlagen der Detailplanung [Chapter. 6.1 Fundamentals of detailled planning]. In H.-P. Wiendahl, J. Reichardt & P. Nyhuis (Eds.), *Handbuch Fabrikplanung. Konzept, Gestaltung und Umsetzung wandlungsfähiger Produktionsstätten.* Hanser. Under Review.

Mütze, A. (2022). Kapitel. 8 - Produktionsplanung und -steuerung [Chapter. 8 Production Planning and Control]. In H.-P. Wiendahl, J. Reichardt & P. Nyhuis (Eds.), *Handbuch Fabrikplanung. Konzept, Gestaltung und Umsetzung wandlungsfähiger Produktionsstätten.* Hanser. Under Review.

Articles in magazines and websites (unreviewed)

Mütze, A. & Kämpfer, T. (2022). Optimierung und Digitalisierung des Auftrags-abwicklungsprozesses [Optimisation and digitalisation of the order fulfilment process]. In: *Zukunft.Digital - Digitalisierung von der Idee zur Umsetzung, 01/2022*, ISBN: 978-3-95900-697-2, https://www.researchgate.net/publication/361305557

Mütze, A. (2020). Produktionsplanung und -steuerung ganzheitlich konfigurieren [Configure production planning and control holistically]. In: *phi – Produktionstechnik Hannover informiert, Newsletter Nr. 29 / Dezember 2020*. https://doi.org/10.48811/phi-20-024

Mütze, A. (2019). IFA-Lernfabrik: Zielgerichtete Nutzung von Echtzeitdaten [IFA Learning Factory: Targeted use of real-time data]. In: *phi – Produktionstechnik Hannover informiert, Newsletter Nr. 22 / März 2019*. https://tinyurl.com/IFALearningFactory

Scholarships and Awards

2013 & 2015	Lower Saxony Scholarship of Leibniz University Hannover
01/2014 – 09/2018	Student scholarship, Konrad-Adenauer-Stiftung [foundation] (KAS)

Teaching and Supervision

Courses taught at Bachelor / Master level

2021	Practical Course *Production Analytics* - Lecturer of the practical part at Leibniz University Hannover, Germany
2020	Logistics modelling of the supply chain (in charge) and lecturer of exercise course at Leibniz University Hannover, Germany
2018/2019	Production Management and Logistics (in charge) and lecturer of exercise course at Leibniz University Hannover, Germany

Supervision of undergraduate students

Supervision of various Bachelor's and Master's theses in the field of production planning and control with a focus on in-house production planning and control and on topics related to the further development of the IFA Learning Factory.

Professional Service and Memberships

Consulting and dissemination activities

2018 – present	Execution of contract research projects e.g.: • Analysis of the production configuration of a company in the MRO industry • Restructuring of the factory layout and production logic of a supplier to the maritime industry • Digitalisation of the order processing of an SME in the metal construction industry
2019 & 2021	Organizing committee member, Expertenforum Produktionsplanung und -steuerung [Experts Panel Production Planning and Control] of the Institutes WZL (Aachen), IFA (Hannover), IGCV Augsburg & IPMT (Hamburg). *Main responsibilities:* Program design, financial calculation, homepage design, technical support

Presentations / Talks

Nyhuis, P., Lucht, T., & **Mütze, A.** (2019, May). Modellgestützte Gestaltung von Produktionssystemen [Model-based design of production systems]. Talk at the self-hosted Expertenforum PPS 2019 [forum on Production Planning and Control], Frankfurt a.M., Germany.

Nyhuis, P., Lucht, T., & **Mütze, A.** (2020, November). IT follows Process follows IT. Talk at Convention on Digital Opportunities of the Forschungsinstitut für Rationalisierung (FIR) e. V. an der RWTH Aachen, Aachen, Germany.

Nyhuis, P., Lucht, T., **Mütze, A.**, & Wenzel, A. (2021, June). Robuste Lieferkettengestaltung [Robust supply chain design]. Talk at the self-hosted Expertenforum PPS 2021 [forum on Production Planning and Control], Frankfurt a.M., Germany.

Collaborations

Collaborations in research projects

- Koenig & Bauer Industrial [German Research Foundation: 409759709]
- Prof. Matthias Schmidt, Institute of Product and Process Innovation (PPI) of Leuphana University Lüneburg [German Research Foundation: 434659386]

Regular research and discussion meetings with other research associates

- Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen [Prof. Schuh]
- Institute of Production Management and Technology (IPMT) of TUHH Hamburg University of Technology [Prof. Lödding]
- Fraunhofer Institute for Casting, Composite and Processing Technology IGCV [Prof. Schilp]

Other Qualifications and Experiences

Languages

German (native)

English (proficient, written and spoken)
French (basic)

Software

KNIME (expert)

MS Excel / Access incl. VBA (expert)

Plant Simulation (expert)

HTML, C, C++, Python (intermediate)

Linux (intermediate)

Tableau (intermediate)
GAMS, Simio, SimPy (basic)
MatLab (basic)

Certificates

IPMA Project Management Level D
KNIME Data-Analyst and Celonis Data-Engineer
Professional Scrum Master I
Six Sigma Black Belt

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