University Academic Curriculum Vitae

Personal information Name: Aurora Berni

Education since leaving school

- 2024 PhD in Advanced Systems Engineering, Free University of Bozen-Bolzano
- 2018 Master Degree in Design, Università degli Studi di Firenze
- 2016 Bachelor Degree in Industrial Design, Università degli Studi di Firenze

Present appointment

- **Title of appointment:** Tecnologie digitali per la sostenibilità sociale ed il benessere umano nell'interazione con nuovi prodotti
- **start of appointment:** 15/01/2025 – 31/04/2027
- **Level of appointment:** Fixed-time research Assistant
- **Institution:** Free university of Bozen-Bolzano; Faculty of Engineering
- **brief description of responsibilities:** research activity, Analyze data collected with Eye-Tracking systems and develop new experiments using Design of Experiments methods to achieve the pre-established research objectives.

Positions won

- **Title of appointment:** Analisi di dati relativi al comportamento visuale di persone in attività di interazione uomo-prodotto (Analysis of data on the visual behavior of people in human-product interaction activities)
- **start of appointment:** 1/02/2024 – 30/04/2025
- **Level of appointment:** Fixed-time research Assistant
- **Institution:** Free university of Bozen-Bolzano; Faculty of Education
- **brief description of responsibilities:** research activity, Analyze data collected with Eye-Tracking systems and develop new experiments using Design of Experiments methods to achieve the pre-established research objectives.
- **Title of appointment:** PhD candidate in Advance Systems Engineering
- **start of appointment:** 1/11/2020 – 4/07/2024
- **Level of appointment:** PhD student
- **Institution:** Free university of Bozen-Bolzano; Faculty of Engineering
- **brief description of responsibilities:** research activity, collaboration and support in research and experimental activities

- **Title of appointment**: FaST236 _ fewseconds
- start of appointment: 20/07/2020 – 31/08/2020
- **Level of appointment**: Assignment for occasional collaboration in scientific field
- **Employer**: Free university of Bozen-Bolzano
- **brief description of responsibilities:** Development of a guideline testing tool for eco-sustainable design

- **Title of appointment**: Research in Industrial Usability of Eye Tracking for Manufacturing and Design in SMEs (EYE-TRACK) – Additive Manufacturing FDM: Dimensional Accuracy and Product Acceptability (AMDAPA)
- **start of appointment:** 15/07/2019 - 14/07-2020

- **Level of appointment:** Fixed-time research Assistant
- **Employer:** Free university of Bozen-Bolzano
- **brief description of responsibilities**: collaboration at research activity

Professional experience

From / to	Job title	Name of academic Institution	Academic level	responsibilities
15/07/2019 to 14/07-2020	Research in Industrial Usability of Eye Tracking for Manufacturing and Design in SMEs (EYE-TRACK) – Additive Manufacturing FDM: Dimensional Accuracy and Product Acceptability (AMDAPA)	Free university of Bozen-Bolzano	Research assistant	Collaboration and support to research activity
20/07/2020 to 31/10/2020	scientific field FaST236 _ fewseconds	Free university of Bozen-Bolzano	Occasional collaboration in scientific field	Development of a guideline testing tool for eco-sustainable design
02/02/2024 to 31/04/2025	Analysis of data on the visual behavior of people in human-product interaction activities	Free university of Bozen-Bolzano	Research assistant	Collaboration and support to research activity

Experience in academic teaching

Course work

- Dr. Berni had 20 hours assigned as lecturer at the course “Technical Drawing and CAD” in the second semester of the academic year 2024/2025 (bachelor in Wood Technology)
- Dr. Berni had 14 hours assigned as lecturer at the master course “Product development and Design”, module “**-**Engineering and Product Design” in the first semester of the academic year 2024/2025 (Master in Mechanical Engineering)
- Dr. Berni has held the 3-hour seminar „Applicazione del modello di Kano “, for the course “Sviluppo e Ingegnerizzazione del Prodotto” UNIFI, 2nd October 2024
- Dr. Berni had 20 hours assigned as teching assistant at the course “Technical Drawing and CAD” in the second semester of the academic year 2023/2024 (bachelor in Wood Technology)

Seminars
Below are the seminars in which Dr. Berni has been appointed as Lecturer

Seminar and/or course title	**Course title**	**Institution**	**Date**	**Language**	**Hours taught**
Biometric instruments too support product development – the eye tracking	-	UNIFI	25/11/2019	Italian	3
Applicazione del modello di Kano	Sviluppo e Ingegnerizzazione del Prodotto	UNIFI	18/10/2021 (online) 5/10/2022 11/10/2023 2/10/ 2024	Italian	3

Biometric devices and eye tracking	Kick-off meeting for the project week "Technology-Supported Design Research"	TUM Munich	18/11/2024	English	1.5

Supervision and tutorship

Dr. Berni has been nominated co-supervisor of a PhD student who do/have done research to pursue the following objectives.

Memberships

Conferences

- Part of the organizing committee and part of the scientific committee in the 2nd International Symposium on Industrial Engineering and Automation ISIEA 2023 - Towards a Smart, Resilient and Sustainable Industry, Bozen-Bolzano (Italy), June 22nd 23rd , 2023
- Part of the organizing committee in the 21ST ETRIA WORLD CONFERENCE "TRIZ FUTURE 2021", Online, September 22nd to 24th , 2021

Conferences Reviews

Dr. Berni has served as reviewer for the following conferences
ICED 2020(online)
ADM 2021

Journal Reviews

Dr. Berni has served as reviewer for the following scientific journals:

- Design science
- International Journal on Interactive Design and Manufacturing (IJIDeM)
- Artificial Intelligence in Engineering Design, Analysis and Manufacturing (AI EDAM)

Research Interests

Design process, Research in ergonomics, product affordances, cognitive psychology, use of biometric instruments, Virtual Reality, industrial design, market survey, communication strategies, products functional aspect and prototyping, research of new methods for innovation.

Personal Skills

- use of laboratory instruments (Remote eye tracking, eye tracking glasses, Virtual Reality headset with eye tracking integration)
- design and management of experiments
- use of software for 3d modelling and graphics (AutoCad, Solidworks, SketchUp, Rhioceros, Zbrush, Unity, Adobe Photoshop, Adobe Illustrator, Adobe Indesign, Adobe After Effects)

Courses Attended

- 23rd Summer school on engineering design research (SSEDR22) (12th – 18th June 2022 and 31st July – 6th August 2022)
- E-Prime course at CESlab in Brixen-Bressanone UNIBZ Campus. The participants learnt how to use E-prime, which is one of the most widespread software for the study of human behavior and UX. (17th -19th December 2020)
- "Fondamenti di CAD 3D" held at the Smart Miny Factory in Bozen-Bolzano (15th ,23rd and 29th January 2020), the seminar introduced the participants to the CAD 3D modeling.
- "Stampa e scansione 3D, panoramica delle tecnologie di stampa 3D" held at the Smart Miny Factory in Bozen-Bolzano (30th January 2020), during the seminar an overview of the main Additive Manufacturing technologies has been given, with particular focus on 3D printing technologies.

Publications

Journal articles

- **Berni, A.**, Ruiz-Pastor, L., & Borgianni, Y. (2024). User evaluation of a tiny house design through eye-tracking-integrated virtual reality: the role of sense of presence, visual behaviour and informative context. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 1-20. https://doi.org/10.1007/s12008-024-02055-y

- **Berni, A.**, Borgianni, Y., & Carbon, C. C. (2024). Association change and its relationship with designs in context and form: how product evaluation is affected by negative framings. *Journal of Engineering Design (JED)*, 1-31. https://doi.org/10.1080/09544828.2024.2380620

- **Berni, A.**, Borgianni, Y., Basso, D., Carbon, C. C. (2023). Fundamentals and issues of user experience in the process of designing consumer products. *Design Science*, 9, E10. https://doi.org/doi:10.1017/dsj.2023.8

- Borgianni, Y., Pradel, P., **Berni, A.**, Obi, M., Bibb, R. (2022). An investigation into the current state of education in Design for Additive Manufacturing, *Journal of Engineering Design*, 33:7, 461-490.
- https://doi.org/10.1080/09544828.2022.2102893

- Nezzi, C., Ruiz-Pastor, L., Altavilla, S., **Berni, A.**, Borgianni Y. (2022). How Sustainability-Related Information Affects the Evaluation of Designs: A Case Study of a Locally Manufactured Mobile Tiny House. *Designs*. 6(3):57. https://doi.org/10.3390/designs6030057

- **Berni A.**, Borgianni Y. (2021) Making Order in User Experience Research to Support Its Application in Design and Beyond. *Applied Sciences*.; 11(15):6981. https://doi.org/10.3390/app11156981

- **Berni, A.**, Maccioni, L., & Borgianni, Y. (2020). Observing Pictures and Videos of Creative Products: An Eye Tracking Study. *Applied Sciences*; 10(4):1480. https://doi.org/10.3390/app10041480

- **Berni, A.**, & Borgianni, Y. (2020). Applications of Virtual Reality in Engineering and Product Design: why, what, how and when. *Electronics*; 9(7): 1064. https://doi.org/10.3390/electronics9071064

Conference papers

Berni, A., Borgianni, Y., Rotini, F., Gonçalves, M., & Thoring, K. (2024). Stimulating design ideation with artificial intelligence: present and (short-term) future. in: Proceedings of the Design Society. Presented at the DESIGN Conference, Cambridge University Press, Cavtat, Croatia, Vol. 1, pp. 1939–1948. https://doi.org/10.1017/pds.2024.196

Berni, A., Borgianni, Y., & Basso, D. (2024). Creativity of products as meant by ordinary people: to what extent do novelty and usefulness matter? in: Proceedings of the Design Society. Presented at the DESIGN Conference, Cambridge University Press, Cavtat, Croatia pp. 895–904. https://doi.org/10.1017/pds.2024.92

Berni, A., Borgianni, Y., Carbon, CC. (2023). Fluency of Stimuli Comparing Two Different Representation Forms: Image and Real Product. In: Borgianni, Y., Matt, D.T., Molinaro, M., Orzes, G. (eds) Towards a Smart, Resilient and Sustainable Industry. ISIEA 2023. Lecture Notes in Networks and Systems, vol 745. Springer, Cham. https://doi.org/10.1007/978-3-031-38274-1_39

Berni, A., Nezzi, C., Piazzolla, N., & Borgianni, Y. (2023). Visual behaviour in the evaluation of physical and virtual prototypes. in: Proceedings of the Design Society. Presented at the ICED23, Cambridge University Press, Bordeaux, France, Vol., 3, pp. 3821–3830. https://doi.org/10.1017/pds.2023.383

Berni, A., Nezzi, C., Ruiz-Pastor, L., Altavilla, S., Kofler, I., Borgianni, Y. (2023). Exploring People's Visual Perception and Its Impact on Evaluation of a Tiny House Prototype Using Eye Tracking Technology. in: Gerbino, S., Lanzotti, A., Martorelli, M., Mirálbes Buil, R., Rizzi, C., Roucoules, L. (Eds.), Advances on Mechanics, Design Engineering and Manufacturing IV. Presented at the JCM22, Springer International Publishing, Ischia, Italy, pp. 1471–1482.

Berni, A., Altavilla, S., Ruiz-Pastor, L., Nezzi, C., & Borgianni, Y. (2022). An Eye-Tracking Study to Identify the Most Observed Features in a Physical Prototype of a Tiny House. in: Proceedings of the Design Society. Presented at the DESIGN Conference, Cambridge University Press, Dubrovnic, Croatia, Vol., 2 pp. 841–850. https://doi.org/10.1017/pds.2022.86

Berni, A., Borgianni, Y. (2022). User Experience Design in Software and Hardware Components Studied in Human-Computer Interaction. in: Rizzi, C., Campana, F., Bici, M., Gherardini, F., Ingrassia, T., Cicconi, P. (Eds.), Design Tools and Methods in Industrial Engineering II. Presented at the ADM22, Springer International Publishing, Rome, Italy, pp. 91–99.

Berni, A., Dallago, F., Maccioni, L., Concli, F., Borgianni, Y. (2022). The Role of Rapid Prototyping Devices in the Design and Manufacturing Practices of FabLab Visitors: A Survey. in: Rizzi, C., Campana, F., Bici, M., Gherardini, F., Ingrassia, T., Cicconi, P. (Eds.), Design Tools and Methods in Industrial Engineering II. Presented at the ADM22, Springer International Publishing, Cham, pp. 401–409.

Berni, A., Borgianni, Y., Obi, M., Pradel, P., & Bibb, R. (2021). Investigating perceived meanings and scopes of design for additive manufacturing. in: Proceedings of the Design Society. Presented at the ICED21, Gotheborg, Sweden, Vol. 1, pp. 1937–1946. https://doi.org/10.1017/pds.2021.455

Berni, A., & Borgianni, Y. (2021). From the definition of user experience to a framework to classify its applications in design. in: Proceedings of the Design Society. Presented at the ICED21, Gotheborg, Sweden, Vol. 1, pp. 1627–1636. https://doi.org/10.1017/pds.2021.424

Berni, A., Maccioni, L., & Borgianni, Y. (2020). An Eye-tracking supported investigation into the role of forms of representation on design evaluation and affordances of original product features. in: Proceedings of the Design Society. Presented at the DESIGN Conference, Dubrovnic, Croatia, pp. 1607–1616. https://doi.org/10.1017/dsd.2020.296

Under review

- **Berni, A.**, Borgianni, Y. (2024). An experimental study on familiarity, contextual factors and representation forms in human-product interaction. *International Journal of Design Creativity and Innovation (IJDCI)* (Under 2nd review round)

Further data

Participation at the following event:

- Long Night of Research (LUNA), Bolzano (Italy), September, 27th , 2019
- Science Live, Bolzano (Italy), October, 6th 2023

Language competence	Italian: mother tongue English: C1, internal UNIBZ exam German: C1, Goethe Institut Spanish: B1, Instituto Cervantes

Date	Signature
20/03/2024	Aurora Berni