JÚLIA BEGRMANN

Data Scientist & Musician

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EDUCATION

Eötvös Loránd University

PhD in Informatics

Sep 2020 – Jun 2025 Budapest

- Industrial data analytics
- Defining and refining production system models
- Machine learning

Budapest University of Technology

MSc in Mathematics

Sep 2015 – Jun 2018 Budapest

- Specialized on Analysis

Budapest University of Technology

BSc in Mathematics

Sep 2015 – Jun 2018 Budapest

EXPERIENCE

Data Analyst & Scientist

EPIC InnoLabs

Sep 2018 – Present Budapest

- blah
- blah
- blah

Researcher

SZTAKI

Oct 2017 – Present Budapest

- blah
- blah

Trainee

Nokia

Sep 2016 – Jan 2017 Budapest

- blah

LANGUAGES

English
French
Spanish

TECHNICAL SKILLS

Python | SQL | Plotly | Dash | NumPy | Pandas | Scikit-learn | Tensorflow | Pycaret | R | Shiny | Plant Simulation | Xpress | LaTeX

PROJECTS

Project

- Synthesizing Music Information Retrieval (MIR) and genetic algorithms to discover and improve short, music generating lines of C code.
- Implementing the model using a similar approach to the Ramanujan Machine.

Project

- Designing and developing an electronic health records system focusing on aiding and assisting patients as well as providing a smoother data management experience for healthcare personnel (e.g. Physicians, Nurses, etc.).

Project

- Developed an MIR algorithm to detect pitches in .mp3 files, reproduce them in MIDI, and synthesize them using custom wave formats.
- Used real-time signal processing to visualize the outputs generated by the algorithm.

Project

- Designed and developed a flight booking website from scratch, providing multiple services to both end-consumers and airlines.
- Implemented the website using Python, Flask, SQL, JS and HTML/Bootstrap/CSS.

Project

- Solely developed a program to automatically generate quarterly performance reports for Arch Global Advisors, scraping the web to get historical stock price data, dividend data, and earnings release dates.
- Ultimately cut the firm's reporting process from days to minutes.

SOFT SKILLS

- Natural networker, who, having lived in several countries, quickly adapts to social environments with people from all over the world.
- Hosted Chinese Language Competition at NYU, acting as an MC for an audience of more than 100 attendees.
- Acted as a Community Manager for Red Pulse, successfully leading a group of over 150 writers.

PUBLICATIONS

[1] Bergmann, J., Zeleny, K. É., Váncza, J., Kő, A. (2022). Tool failure recognition using inconsistent data. *Procedia CIRP 107*, 1204-1209. https://doi.org/10.1016/j.procir.2022.05.132

[2] Bergmann, J., Gyulai, D., & Váncza, J. (2021). Adaptive AGV fleet management in a dynamically changing production environment. *PROCEDIA MANUFACTURING*, *54*, 148–153. http://doi.org/10.1016/j.promfg.2021.07.046

[3] Bergmann, J., Gyulai, D., & Váncza, J. (2021). Automated vehicle fleet management in manufacturing environments combining network analysis, parameter prediction and optimization techniques. In *IFORS 2021 Virtual*, *Programme Book* (pp. 128–128). https://www.euro-online.org/conf/admin/tmp/program-ifors2021.pdf

[4] Frye, M., Gyulai, D., Bergmann, J., & Schmitt, R. H. (2021). Production rescheduling through product quality prediction. *PROCEDIA MANUFACTURING*, *54*, 142–147. http://doi.org/10.1016/j.promfg.2021.07.022

[5] Bergmann, J., Gyulai, D., Morassi, D., & Váncza, J. (2020). A stochastic approach to calculate assembly cycle times based on spatial shop-floor data stream. *PROCEDIA CIRP*, *93*, 1164–1169. http://doi.org/10.1016/j.procir.2020.03.052

[6] Gyulai, D., Bergmann, J., Lengyel, A., Kádár, B., & Czirkó, D. (2020). Simulation-based Digital Twin of a Complex Shop-Floor Logistics System. In *Proceedings of the 2020 Winter Simulation Conference*, *WSC 2020* (pp. 1849–1860). http://doi.org/10.1109/WSC48552.2020.9383936

[7] Gyulai, D., Bergmann, J., & Váncza, J. (2020). Adaptive network analytics for managing complex shop-floor logistics systems. *CIRP ANNALS-MANUFACTURING TECHNOLOGY*, *69*(1), 393–396. http://doi.org/10.1016/j.cirp.2020.04.002

[8] Gyulai, D., Pfeiffer, A., & Bergmann, J. (2020). Analysis of asset location data to support decisions in production management and control. *PROCEDIA CIRP*, *88*, 197–202. http://doi.org/10.1016/j.procir.2020.05.035

[9] Molontay, R., Horváth, N., Bergmann, J., Szekrényes, D. L., & Szabó, M. (2020). Characterizing curriculum prerequisite networks by a student flow approach. *IEEE TRANSACTIONS ON LEARNING TECHNOLOGIES*, *13*(3), 491–501. http://doi.org/10.1109/TLT.2020.2981331

[10] Tsutsumi, D., Gyulai, D., Takács, E., Bergmann, J., Nonaka, Y., & Fujita, K. (2020). Personalized work instruction system for revitalizing human-machine interaction. *PROCEDIA CIRP*, *93*, 1145–1150. http://doi.org/10.1016/j.procir.2020.04.062

[11] Frye, M., Gyulai, D., Bergmann, J., & Schmitt, R. H. (2019). Adaptive scheduling through machine learning-based process parameter prediction. *MM Science Journal*, *2019*(November), 3060–3066. http://doi.org/10.17973/MMSJ.2019_11_2019051

[12] Gyulai, D., Bergmann, J., Gallina, V., & Gaal, A. (2019). Towards a connected factory: Shop-floor data analytics in cyber-physical environments. *PROCEDIA CIRP*, *86*, 37–42. http://doi.org/10.1016/j.procir.2020.01.016

[13] Nick, G., Szaller, Á., Bergmann, J., & Várgedő, T. (2019). Industry 4.0 readiness in Hungary: model, and the first results in connection to data application. *IFAC PAPERSONLINE*, *52*(13), 289–294. http://doi.org/10.1016/j.ifacol.2019.11.185

[14] Gyulai, D., Pfeiffer, A., Bergmann, J., & Gallina, V. (2018). Online lead time prediction supporting situation-aware production control. *PROCEDIA CIRP*, *78*, 190–195. http://doi.org/10.1016/j.procir.2018.09.071