Simon Brandkamp

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Cologne, 5/31/2021

Doctoral Student Workshop on Economics of Artificial Intelligence

Dear Madam or Sir,

I would like to apply for your Doctoral Student Workshop on Economics of Artificial Intelligence since I am interested in opportunities to apply AI to research on market design and behavioral economics.

In particular, I aim to use AI and machine learning techniques for improving allocation mechanisms in electricity markets. Currently, I focus on how machine learning techniques can be used for preference elicitation in auctions and other allocation mechanisms. These techniques could, for instance, be employed to improve bidding and information sharing in short-term balancing markets for electricity. I would also like to apply AI models to study price formations and bidding strategies in auctions for large-scale investment projects like electric capacity markets or spectrum auctions.

Moreover, I am interested in studying the behavioral foundations of decision-making in markets via computational simulations. In a current research project, I employ a decision tree-based simulation to analyze how the decisions of investors in electricity markets are affected by regulatory uncertainty. I plan to extend this model to incorporate more advanced modeling techniques like reinforcement-learning algorithms to study the effects of uncertainty on optimal investment strategies.

I am confident that your workshop and the inspiring community of young fellow researchers could provoke fruitful collaborations with other participants in these research fields.

Best regards,



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Education

05/21–today **Ph.D. Candidate** – University of Cologne – Department of Economics
- Prof. Dr. Peter Cramton - Chair of Economics: Market Design
- Research interest: Market Design, Behavioral and Energy Economics

09/18-06/21 **Master Economic Research** – University of Cologne
- Core courses: Mathematics – Micro/Macroeconomics – Econometrics – Game Theory – Mechanism Design – Energy Economics

2013–2017 **Bachelor Philosophy & Economics** – University of Bayreuth – Grade: 1.5

2015 **Exchange Semester** – The University of Hong Kong

2004–2013 **University Entrance Diploma** – Bischöfliches St.-Josef-Gymnasium, Bocholt – Grade: 1.2

Languages
German: Native speaker
English: Fluent, Toefl ibt-Test: 112/120 Points
Spanish: Conversational ability, one-year school exchange in Costa Rica, 2010/11

Work Experience

09/18–03/21 **Working Student** – McKinsey & Company, Düsseldorf
- Analyzed trends in European electricity and natural gas markets

06/19–08/19 **Summer Project Intern** – Statkraft, Oslo/New Delhi
- Executed a student project to investigate business models in the Indian power market

09/17–08/18 **BA Graduate Research Analyst** – McKinsey & Company, Düsseldorf
- Analyzed electricity markets and business models for companies in the energy sector

02/16–06/16 **Analyst Intern** – Investment Bank Donghai Securities, Shanghai
- Conducted business model analysis and evaluated 4 target companies for M&A

04/15–07/15 **Teaching Assistant** – University of Bayreuth, Germany
- Instructed 15 students in methods for academic writing and presenting

Projects & Interests

Projects **Head of speaker acquisition team** for the academic congress Bayreuther Dialoge

Startup competition: Ranked 3rd regionally in Deutscher Gründerpreis für Schüler 2013

Volunteering **Head of marketing-team** of the intercultural volunteering platform aufeintreffenmit.de

Orchestra leadership: Organized concerts and social events while playing the French Horn

Software MS Office, Matlab, Stata, R, Python