Florian Huber

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Reseach Interests

Supply-Use Table for Socio-Metabolic Accounting
Input-Output Modelling
Linear Programming
Critical Political Economy of Copper
International Financial Subordination Theory
Machine Learning

Education

Ecological Economics, PhD Candidate *04/25-*

Vienna University of Business and Economics, AT

- Building a python-based Physical Supply-Use Table Optimization (pySUTO) Framework and Software Infrastructure for generalizable and consistent accounting of energy transition metals
- Develop optimization models to dis-aggregate the primary stages (mining/smelting/refining) of copper supply chains
- Explain the intersection of ownership, financial subrodination and socio-metabolism in the copper system trough a critical poltitical economy lense

Industrial Ecology, Master of Science *09/22 -05/25*

Leiden University, Delft University of Technology, NL

- Thesis: here Does All the Ore Come From? Predicting Mine-Level Cumulative Production of Copper, Nickel, Zinc Mines in Data-Scarce Regions Using a Geospatial Machine Learning Model
- Relevant courses: Spatial Data Analysis, Static/Dynamic material flow analysis, Methods: Analysing Physical Processes (Environmental extended input-output modelling, Life cycle assessment), Model-based decision making

Industrial Engineering (Design of Functional Materials), Bachelor of Science *09/18 - 03/22*

University of Augsburg, DE

- Thesis: Microstructural Investigation of Process Parameters Affecting Ni90Cr10 and Ni95AlMnSi for the Production of Temperature Sensors in Multi-Material Laser Beam Melting
- Relevant Courses: Resourcegeography, Systematic selection of sustainable materials, Operations research, Production technology, Material Science (I-IV)

Academic Experience

Data analytics: Decolonialization of Critical Raw Materials (DCRM) *11/23 -05/25*

Delft University of Technolog, NL

- Development of a Multi-Level Framework that enables both the spatially explicit assessment of the colonial risk of critical raw material extraction concerning Indigenous communities and the tracking of this risk through global supply chains.
- Methods: Geospatial data analysis, Multi regional input-output modeling (MRIOs)
- Tools: Python (Pandas, Geopandas, Rasterio, Pysal)

Teaching Assistant: Earth systems Science and Analysis *09/23 - 03/25*

Leiden University, NL

- Development of interactive Python scripts that introduce students to programming and basic data analytics.
- Tutoring in the course accompanying the programming tutorials

Non academic experience

Working Student: Sustainability Consultant *04/23 - 01/24*

Nexpirit GmbH, DE

- Developing concepts for inventory and impact analysis based on bill of material (BOM) structures
- Conceptualization of inventory assessment trough supply chain queries
- Conceptualization of the integration of derived sustainability indicators (climate change, water consumption) in industrial decision-making (CAD-Software, product life cycle management software (PLM)) in close corporation with Siemens development team.
- System design and conceptualizations in alignment with (EN15804, ISO 14040, ISO 14025)

Skills

Programming & Computational Tools: Python (advanced), R (basic), Julia (basic)
Quantitative Methods: Input–Output Modeling, Supply–Use Tables, Linear Programming, RAS Optimization, Static & Dynamic Material Flow Analysis, Spatial Data Analysis, Machine Learning, Scenario & Exploratory Modeling
Research & Technical Tools: Overleaf, MS Office, Jira
Languages: German (native), English (C1)

References

Victor Maus, Senior Researcher *03/24 -*
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Stefan Giljum, Associate Professor *05/25 -*
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