

# Luke Wortsmann

Chicago, IL

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## Experience

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Current  
May 2021

OTT Risk

Data Scientist

*OTT is a venture backed startup using machine learning to offer parametric business interruption insurance.*

Projects & Responsibilities:

- Structured parametric policies, identified and developed indices, and collaborated with clients and other stakeholders to efficiently transfer novel risk.
- Developed pricing models using Stan and PyTorch, presented and defended these models to various reinsurers and capacity providers.
- Built dashboards and APIs to monitor and serve pricing and risk models using FastAPI and Dash, then deployed these to Google Cloud Platform.

2017 - 2021  
Northbrook, IL

SBB Research Group

Tactics Associate

*SBB is a quantitative hedge fund based in the suburbs of Chicago.*

Projects & Responsibilities:

- Coordinated research, risk-management, and trading of a large portfolio of OTC derivatives.
- Built complex valuation and risk management tools from the ground up based on local and stochastic volatility models using Python, C, and Flask.
- Developed proprietary market signals based on large fundamental and alternative datasets, with TensorFlow, SQL, and R.
- Designed and managed algorithmic trading strategies for equities, equity options, and exotic derivatives.
- Led project management of a team of software engineers and multiple stakeholders across the firm to implement internal tools and trading strategies.
- Trained interns and full-time employees in the Tactics (quantitative research) department.

Summer 2016  
Chicago, IL

KCG Holdings

Quantitative Trading Intern

*KCG was a global high frequency trading firm and market maker.*

Projects & Responsibilities:

- Researched proprietary trading signals using machine learning and Bayesian methods.
- Analyzed massive complex datasets using Python, Vertica, and Scikit-Learn.
- Collaborated with traders and other interns on the US equities desk.

2014 - 2017  
Urbana, IL

Center for Complex Systems Research

Student Researcher

*CCSR is an interdisciplinary research group based in the physics department at UIUC.*

Projects & Responsibilities:

- Utilized Mathematica to model the Coulomb blockade in nanocapacitors, resulting in a publication.
- Participated in weekly meetings with Dr. Alfred Hubler and an interdisciplinary research team.

## Education

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2014 - 2017  
Urbana, IL

College of Engineering **University of Illinois Urbana-Champaign**

Bachelor of Science Physics | Minor Mathematics

3.71 / 4.00 GPA. Degree completed in three years.

Awards: James Scholar, Dean's List

Course work in: Numerical PDEs, Differential Geometry, and Probability Theory

## Publications

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March 2018

Large energy density in three-plate nanocapacitors due to Coulomb blockade.

*Journal of Applied Physics*

with Alfred Hubler, S. Foreman, and J. Liu

Worked with Dr. Hubler to develop theory, ran simulations in Mathematica, and drafted the paper.