



An Academic Path in Applied Mathematics

Professor Fabian N. Harang



From PhD to Professor

- **Name:** Fabian Nøst Harang
Title: Professor of Mathematics, BI Norwegian Business School
PhD: University of Oslo - Mathematics - Stochastic Analysis / **Rough Path theory**
- **Academic Path:**
 - BSc (Economics/Finance/Math) → MSc (Mathematics, Stochastic Analysis) → PhD
 - Postdoc at UiO → Stochastic Analysis (Giulia Di Nunno's group)
 - Associate Professor at BI
 - Full Professor
 - Director of AMOR - Center for Applied Mathematics and Operations Research
 - (Also worked many years in industry before and during studies at CitiBank, Gjensidige Bank, Alpha formuesforvaltning, NADAQ OMX, and Fronteer solutions (hedge fund)...)

Building a Research Career

- **Early focus:** Theoretical aspects of stochastic analysis
- **Gradual Shift:** Increasing interest in problems with real-world structure and constraints.
- **Current Focus:** Interdisciplinary applications in operations research, retail, finance, and sustainable decision-making
- **Institutional move:** From a traditional university (UiO) to a business school (BI) - new challenges and broader impact (as a mathematician...)
- **Lesson:** Stay flexible and open to new environments

My Current Role at BI Norwegian Business School

- Co-led the *Signatures for Images* project with Kurusch Ebrahimi-Fard (NTNU) at the Center of Advanced Studies (CAS) in Oslo, 2023/2024.
 - A 1 year research project to lay mathematical foundations of 2D signature methods.
- **Director of AMOR**
 - Largest applied math initiative in Norway
 - Bridging theory with practice in finance, energy, transport, and retail
- **Current flagship project: Smart Matflyt**
 - Joint with REMA 1000
 - Optimizing food logistics using mathematics, AI, and operations research

Responsibilities and Impact

- **Research**
 - Lead and collaborate on interdisciplinary projects
 - Publish and supervise PhD students
- **Teaching**
 - Advanced mathematics, statistics, and modeling for business students
- **Leadership**
 - Set strategic direction for AMOR
 - Build networks across academia and industry
- **Outreach**
 - Promote applied mathematics in society and business

My Best Career Advice

- **Invest in your identity as a researcher**
 - Know your strengths, and communicate them clearly
- **Be interdisciplinary and curious**
 - The most fun and interesting research often happens at the boundaries of fields
- **Build long-term collaborations**
- **Embrace applied problems**
 - They bring relevance, funding, and impact
- **Don't fear non-linear paths**
 - Academia has room for detours, industry engagement, and reinvention

