# DR. MATTHEW LIEW

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## Technical Skills

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|---|---|
| **Expertise** | Statistics, Stochastic Calculus & Financial Mathematics |
| **Programming Languages** | Python, SQL, Rust, C++, R, UNIX |
| **Version Control** | Git |
| **Certification** | SCRUM Master (TÜV) |
| **LinkedIn** | https://www.linkedin.com/in/matthewliew/ |

## Work Experience

**ING Hubs, Poland** *Senior Model Development Specialist* **04/2024 – present**

- Development and implementation of interest rate simulation models in a Python library, managing the entire model lifecycle from conception to validation and monitoring. Maintainence of production code using Git & Azure DevOps CI/CD pipelines.
- Development and implementation of internal web-based applications for interest rate models.
- Conducted trainings for theoretical knowledge of interest rate model, stochastic calculus, Monte Carlo simulation and programming in Python and Rust.
- Awards: Lion Role Model Award for Top Employee in 2024, 3×Wake Up The Lion Awards

**ING Hubs, Poland** *Interim Product Owner (Team Lead)* **06/2024 – 11/2024**

- Led a team in driving the development of interest rate models through Agile management.
- Managed stakeholder relationships and created client-centric solutions for interest rate models.

**Camelot ITLab GmbH, Germany** *Consultant - Data Science Track* **04/2022 – 03/2024**

- Developed and implemented risk quantification of stockouts along with accuracy measurement in lead time calculation and demand forecasting. Stockouts risk mitigated with improved cost saving of 16.7mil CHF.
- Developed of supply risk measurement in creative partnership with a German multinational pharmaceutical and biotechnology company.
- Project lead for a conceptual forecasting model based on mixed Time-Series models for more accurate calculation of consumption and demand forecasts.

**University of Mannheim, Germany** *Scientific Researcher Assistant* **04/2017 – 03/2022**

- Researched in many-body interacting particles and the derivation of its corresponding mean-field approximation.

## Education

**University of Mannheim, Germany** **2017 – 2021**
Dr. rer. nat. Mathematics *Grade: summa cum laude (GPA 4.0)* LGF Fellowship

**University of Mannheim, Germany** **2014 – 2017**
M.Sc. Economics *Grade: Merit (GPA 3.6)* DAAD Graduate Scholarship

**University of Nottingham, UK** **2011 – 2014**
B.Sc. (Hons) Economics *Grade: First Class Honour (GPA 4.0)* Dean's Excellence Award

## Academic Publications

L. Chen, J. Lee, and M. Liew. Combined mean-field and semiclassical limits of large fermionic systems. *Journal of Statistical Physics*, 182(2):1–41, 2021.

L. Chen, J. Lee, and M. Liew. Convergence towards the vlasov–poisson equation from the n-fermionic schroedinger equation. In *Annales Henri Poincaré*, volume 23, pages 555–593. Springer, 2022.

L. Chen, J. Lee, Y. Li, and M. Liew. A mixed-norm estimate of the two-particle reduced density matrix of many-body schrödinger dynamics for deriving the vlasov equation. *Journal of Statistical Physics*, 190(6):109, 2023.

*Research Summary: Applying knowledge from Quantum Mechanics, Statistical Physics and Partial Differential Equations, we demonstrate that there exists a mean-field equation capable of describing the behavior of large condensed fermionic particles.*

## Languages

English (Native), Chinese (Native), Malay (Native) & German (Advanced)