Quantitative Finance
Working Student/Intern/Freelancer

Position	Ympact Advisory GmbH (https://www.ympact.io) supports fintech entrepreneurs and their investors in product innovation. Ympact is currently seeking to hire a student/PhD candidate to support with a concrete product development project.We are **flexible** whether the candidate wants to work as a **Working Student** (<20 hrs/week), **Intern** (full time, 3 months) or under a **Freelance Service Agreement** (flexible)
Project Description	The position will be central to the development of an algorithm applying Bayesian Change Point (BCP) theory to financial timeseries. The goal is to develop a signal that can detect regime changes in financial markets faster than more simplistic models such as moving averages.
Desired Outcome	We expect to build a single algorithmic model, coded in C++, which receives timeseries' from varying financial assets and determines for any given point in time: i. historical change points in the time series (offline BCP problem) to establish the current regime (bull- or bear-market of the time series) ii. the probability of the time series currently undergoing a regime change. This means determining if the time series is currently likely to be in a BCP changepoint (online BCP problem) The C++ platform needs to be constructed in a way that it allows parametrization and optimization of all models based on results.
Required skills	• Undergraduate or Master's degree in either Computer Science, Mathematics, Physics, Quantitative Finance or similar • Focus on statistical methods – (i.e., Bayesian inference, time series analysis, change point detection problems, etc.) • Proficiency with key numerical methods: Markov Chain Monte Carlo (MCMC) and Gibbs sampling schemes. Asymptotic expansion where approximation of analytical expressions is needed • Familiarity with parallel processing in the context of MCMC preferred (multi-chain) • Strong skills in C++ (required), Python (optional)
Location	Remote/Home Office, occasional travel to Frankfurt for alignment
Compensation	€ 30/hr (Working Student), € 3.000/month (Intern), tbd (Freelancer)
Timeline	3 months – starting as soon as possible
Application	Please provide your CV and cover letter by email to: holger.wohlenberg@ympact.io; tassilo.zimmermann@ympact.io