

University of Waikato, New Zealand
Funded PhD Position on Guaranteeing Self-Organized Backup Systems

The research conducted by the University of Waikato's team in collaboration with Unitec Institute of Technology will focus on creating novel architectures and algorithms that securely store massive amounts of high-velocity data. We are looking to apply self-organized-based algorithms and formal methods on server clusters to provide performance, security and privacy guarantees under uncertainty. For example, the cluster may include varying numbers of untrustworthy members coordinating internal attacks and random outages might cause abrupt disconnections. This involves a substantial program of research to develop, implement and apply to industrial case studies.

Applicants are required to have completed (or be close to completing) a Master degree (or equivalent) or a Bachelors with Honors (or equivalent) with outstanding grades in Software Engineering, Computer Science, Computer Engineering or closely related areas. Additional knowledge in related disciplines such as Operating Systems, Computer Architecture, IT Security, Distributed/Parallel Programming, peer to peer networks or Blockchain is welcome.

The candidate should be able to not only design, but also implement and test working prototypes of the algorithms developed during the research period, including being able to prove their guarantees. Good coding skills, knowledge of state-of-the-art distributed storage algorithms (e.g. Raft) as well as experience in C/C++ and Linux are necessary. Knowing Go is preferred. Knowledge of game theory would be considered an asset.

The STRATUS project (<https://stratus.org.nz/>), which is supported by the New Zealand Ministry of Business, Innovation and Employment (<https://www.mbie.govt.nz/>), will provide a stipend of NZD25,000 p.a. and cover the enrollment fees for 3 years.

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Closing Date for Applications: **2019-06-01**

All applications are considered as they are received.