Andrew John Tulloch

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EDUCATION

2008-2011 **University of Sydney — Bachelor of Science (First Class Honours and University Medal) in Mathematics** *(Sydney, Australia)*
- GPA — 93/100 (4.0/4), Honours GPA — 98/100 , GRE — 800Q/700V.
- *Thesis:* "Intensity Models for Credit Risk" (Supervised by Prof. Marek Rutkowski).
- *Graduate Coursework includes*: Artificial Intelligence, Algorithmic Game Theory, Stochastic Processes, Functional Analysis, Time Series Analysis, Interest Rate Models.

SELECTED AWARDS

2011 Awarded the University Medal and the Joye Prize for the highest final year Honours mark (both research and coursework) in the Faculty of Science at the University of Sydney.

2011 Awarded the Science Achievement prize for the **highest** undergraduate GPA over three years in the Faculty of Science, out of over 6,000 students.

2007 Represented Australia at the 39th International Chemistry Olympiad in Moscow. Awarded a **silver medal**, ranking **42nd in the world** and first in the Southern hemisphere.

EXPERIENCE

2012- **Facebook — Machine Learning Engineer, Unified Ranking/Ads Optimization** *(Menlo Park, CA)*
- Worked with Dr. Ralf Herbrich developing Facebook's state-of-the-art distributed machine learning service, providing click-through rate predictions for all ads displayed on Facebook.
- Built an online learning platform capable of learning multi billion dimensional weight vectors trained from tens of billions of impressions per day in real time, distributed across hundreds of servers, and predicting millions of examples every second.
- Worked with Dr. Herbrich and others in solving several fundamental research problems arising from our work, including the development of a novel synchronization algorithm for combining model beliefs across shards in a distributed stochastic gradient descent framework.

2010-2011 **Goldman Sachs — Analyst (Part Time), Algorithmic Trading and FICC** *(Sydney, Australia)*
- Developed machine learning models to improve trading algorithms for the optimal execution of market orders - applying and extending research in several areas of market microstructure.

SKILLS AND INTERESTS

Research Interests: Machine learning, pure and applied statistics, distributed systems.
Technical Skills: Strong knowledge of C/C++, Python, MATLAB/R, Hive/Hadoop/SQL, LaTeX and UNIX.

OTHER ACHIEVEMENTS

2011 Awarded the Faculty of Science Dean's Honour List Prize for achieving the **highest** GPA in third year science.

2011 Awarded the K.E. Bullen Scholarship for ranking **first** in Applied Mathematics.

2011 Awarded the St Andrew's College Medal for the **highest** undergraduate GPA at St Andrew's College.

2010 Awarded the St Andrew's College Bill Caldwell Scholarship for the highest performance across academic, sporting, cultural, and leadership pursuits.

2009 Awarded the Barker Scholarship for ranking **first** out of over 500 students in first year mathematics.

2007 Ranked **2nd** out of over 10,000 students in Western Australia in TEE (high school final examinations), placing **1st** in Physics, and achieving a 99.95 TER.