

Ankit Pat

CONTACT INFORMATION

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EDUCATION

M.Math (Artificial Intelligence) in *Computer Science*,
Cheriton School of Computer Science, University of Waterloo
• GPA: **89/100** at the end of 4 terms

Sept 2013 - Present

5 year integrated M.S. (B.S. Hons. + M.S.) in *Mathematics and Computing*,
Indian Institute of Technology (IIT), Kharagpur
• CGPA: **8.03/10**

July 2007- May 2012

Scholastic Achievements

- Was among the **top 104 students** (no ranks were disclosed) in India to qualify ISI Entrance Examination for Indian Statistical Institute, Bangalore.
- Ranked in the **top 0.5 %** bracket in IIT-Joint Entrance Exam 2007, from among more than 300,000 candidates from all over India.
- **One of 53 recipients** of the IAS-Summer Research Fellowship in Mathematics, from all over India in 2010.

INDUSTRY EXPERIENCE

Innovation Labs, [24]7 Inc., Bangalore, India.

Software Development Engineer (Research & Development)

July 2012 to July 2013

- Worked on applications that provide **predictive multimodal user interaction** through automated web, voice, and chat interfaces.
- Additionally, collaborated with the US-based sales team and, as a part of the team, **bagged 3 Fortune 500 clients**.

Deutsche Bank - Corporate and Investment Banking Centre, Mumbai, India.

Summer Analyst, Global Equity Derivatives Team

May 2011 to July 2011

- **Developed a trading strategy** based on Stock Indices using Time Series Models and Technical Indicators, which yielded an annualized return of 12.1% (averaged over four major Equity Indices) **2.2 times better results than the market returns**.
- **Designed and implemented a model** for sector-wise screening and ranking the stocks of any equity index.

PUBLICATIONS & PROJECTS

An Adaptive Quantum-inspired Differential Evolution Algorithm for 0-1 Knapsack Problem.
In Proc: 2nd World Congress on Nature and Biologically Inspired Computing (NABIC), 2010.

- The **algorithm performed significantly better** than the previous algorithms for all considered test cases.

What Twitter thinks about Gamification.

- **Sentiment classification** of Twitter data using **Machine Learning** techniques and emoticons.

Monte-Carlo Planning in Coordination Games.

- **Modeled and implemented human-like behavior in bots** in a setting where the bots must collaborate but also have individual ambitions.

On Construction of a Class of Orthogonal Arrays. (Undergraduate Thesis)

- Proposed a **novel construction algorithm** for construction of Orthogonal Arrays (Discrete Structures), used in Design of Experiments in Statistics.

An improved quantum-behaved Particle Swarm Optimization using fitness-weighted preferential recombination.

In Proc: 2nd World Congress on Nature and Biologically Inspired Computing (NABIC), 2010.

- Achieved **enhanced performance in multi-dimensional function optimization** compared to the state of the art.

Ant Colony Optimization and Hypergraph Covering Problems.

In Proc: IEEE World Congress on Computational Intelligence (WCCI), Beijing, China, 2014.

- Performed runtime analysis of an Ant Colony Optimization algorithm for covering problems on hypergraphs.

Working: A Multi-agent system for eliciting and moderating behavioral preferences of home owners.

- **Modeling behavior of home owners** to incentivize change in demand-response in smart grid.

TECHNICAL
SKILLS

Programming/Application Skills: **Python, C, C++, Java, MATLAB.**
Operating Systems: **Linux, Mac OS X, Windows.**
Web Development: **MySQL, PHP, HTML, JavaScript.**
Miscellaneous: **Git, SVN.**

SHOLARSHIPS

From University of Waterloo:

- **Vice-President/Provost Award** (\$5000).
- **Faculty of Mathematics Award** (\$5000).
- **University of Waterloo Entrance Scholarships** (\$9000).

From Govt. of India:

- **INSPIRE Scholarship** (\$5000).
- **Devi Mahamaya Mallick Scholarship** (*Best ranked joinee in Mathematics, IIT Kharagpur*).

ACADEMIC
INTERNSHIPS

Indian Academy of Sciences (IAS), Mumbai, India.
(Awarded the Indian Academy of Sciences - Summer Research Fellowship)

Graphs and Algorithms

May 2010 to July 2010

- Worked on Network Flow Problems and a proof of Baranyai's Theorem.

Tata Institute of Fundamental Research - Centre for Applicable Mathematics (TIFR-CAM), Bangalore, India.
(Student Summer Research Fellowship)

Numerical Analysis

May 2009 to July 2009

- Worked on Numerical Schemes for solution of *Hyperbolic Conservation Laws*.

OTHER
INTERESTS

Travel, Music, Photography, Poker.

REFERENCES

Available upon Request.