





PERSONAL INFORMATION **Muhammad Alif Aqsha**

-  Bandung, Indonesia
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EDUCATION

- August 2021 – October 2022 **Master of Science in Mathematics** CGPA 4.00/4.00
Bandung Institute of Technology (ITB), Indonesia
Joint bachelor's/master's fast-track programme
Courses taken (excluding compulsory courses) including:
– Measure and Probability
– Functional Analysis
– Financial Mathematics
– Financial Econometrics
– Computational Finance
– Fourier Analysis
Master thesis: A Model of Banking's Dynamics Using a System of Deterministic Differential Equations with Sensitivity and Stability Analysis
Supervisor: Novriana Sumarti
- August 2017 – July 2021 **Bachelor of Science in Mathematics** CGPA 3.97/4.00
Bandung Institute of Technology (ITB), Indonesia
Courses taken (excluding compulsory courses) including:
– Mathematical Statistics
– Advanced Linear Models (Generalized Linear Models)
– Life Insurance (Actuarial Mathematics) I & II
– Cryptography
– Measure and Lebesgue Integration
Undergraduate thesis: The Boundedness of Wavelet Decomposition Operator in Morrey Spaces
Supervisor: Wono Setya Budhi & Denny Ivanal Hakim

EXPERIENCES (RESEARCH & OTHERS)

- June 2022 – August 2022 **Future Research Talent Scholar (Research Internship)**
The Australian National University
Research experience studying stochastic calculus & differential equations (specifically Doss-Sussman method & Wong-Zakai approximation for regime-switching SDEs) under the supervision of Dr Pierre Portal
Report link: <https://drive.google.com/file/d/1k0ItJRb1JoM6PFcPzq6R-abdZ1eYV2v3>
- May 2022 – Present **Freelance Maths Olympiad Tutor**
Training high-school students for the national mathematics olympiad & other competitions
- February 2022 – Present **Research Assistant**
Bandung Institute of Technology: Industrial and Financial Mathematics Research Group

Research assistant for P2MI (Research, Community Service & Innovation) ITB programme under Novriana Sumarti
Topic: Banking dynamics

January 2022 – Present **Teaching Assistant**

Bandung Institute of Technology

Courses: Calculus 1A, Calculus 2A, Introduction to Stochastic Calculus

For Calculus 1A & 2A, my main responsibility is teaching on a weekly tutorial sessions.

For Introduction to Stochastic Calculus, I was helping with material preparation & presentation as well as partaking in class discussions.

February 2021 – June 2021 **Research Assistant**

Bandung Institute of Technology: Analysis and Geometry Research Group

Research assistant for P2MI (Research, Community Service & Innovation) ITB programme under Marcus Wono Setya Budhi & Denny Iwanal Hakim

Topic: Fourier analysis, wavelets and Morrey spaces

September 2020 – Present **Grader Assistant**

Bandung Institute of Technology

Courses: Calculus 1A, Introduction to Real Analysis, Linear Algebra, Introduction to Complex Analysis, Introduction to the Theory of Interest, Microeconomics

August 2020 – December 2020 **Numerical Mathematics Laboratory Assistant**

Bandung Institute of Technology

Assisted students in Numerical Mathematics Python programming sessions

PREPRINTS

- [1] N. Sumarti, M. A. Aqsha, and M. F. Ansori. "Dynamic models of banking using a system of deterministic differential equations". In: (2022). URL: <http://dx.doi.org/10.2139/ssrn.4213241>.
- [2] I. Magdalena, A. H. Respati Dewabrata, A. Mauditra Aulia Matin, A. Clarissa, and M. A. Aqsha. "A mathematical formulation for estimating maximum run-up height of 2018 Palu tsunami". In: (2020). URL: <https://doi.org/10.5194/nhess-2020-223>.

CERTIFICATES

September 2021 **The Society of Actuaries of Indonesia**

Candidate number: 2021307051

Acquired modules:

A20 Module - Probability and Statistics

A50 Module - Statistical Methods

A60 Module - Actuarial Mathematics

AWARDS & COMPETITIONS

August 2021 **First Prize in International Mathematics Competition (IMC) for University Students**

Link: <https://www.imc-math.org.uk/?act=results&by=sum&year=2021>

The International Mathematics Competition for University Students is an annual mathematics competition open to all undergraduate students of mathematics where they try to solve problems from the fields of algebra, analysis (real and complex), geometry and combinatorics. The IMC is primarily a competition for individuals, although most participating universities select and send one or more teams of students. The First Prize is awarded to the top 27% students.

August 2021 Ganesha Talent Assistantship (GTA) 100 2021-2022

GTA 100 is a merit-based scholarship awarded by Bandung Institute Technology (ITB) to their postgraduate students in the form of full tuition waiver.

September 2020 Gold Medal in KN MIPA-PT for Mathematics

KN MIPA-PT (National Mathematics and Natural Sciences Competition for higher educational institutions), formerly ON MIPA-PT, is an annual event for college students to compete and participate in solving mathematical and natural sciences problems. It is held by the Ministry of Education, Culture, Research and Technology of Indonesia. The event is held in three stages: university/institution, regional/provincial, and national level. I was ranked 2nd out of 50 participants at the national level.

February 2020 Honorable Mention in Interdisciplinary Contest in Modelling (ICM)

Link: https://www.comap.com/undergraduate/contests/mcm/contests/2020/results/2020_ICM_Problem_E_Results.pdf

Team number: 2021115

The Interdisciplinary Contest in Modelling is a mathematical modelling competition held by Consortium for Mathematics and Its Applications (COMAP) as part of larger MCM/ICM event. My team selected Problem E: Drowning in Plastic, in which we built a model on the cycle of plastic waste, estimated the parameters using real data, analysed plastic waste condition in regions grouped by lower, lower-middle, upper-middle and high income countries, and proposed feasible solutions to resolve plastic waste accumulation.

May 2019 Silver Medal in ON MIPA-PT for Mathematics

Ranked 7th out of 64 participants at the national level.

October 2017 BPSDM Aceh Merit Scholarships 2017-2021

BPSDM Aceh (provincial government body responsible for human resources development in Aceh) Merit Scholarships is awarded to 20-30 of Aceh's high-achieving, recently-graduated high school students to study at national universities.

PERSONAL SKILLS

Languages – Indonesian (mother tongue)
– English

Computer skills – Programming (Python, R, MATLAB)
– Microsoft Excel