Rohith Krishna

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Education

2019 – 21 **PGDM in Research & Business Analytics**,
Madras School of Economics, *GPA – 9.15*.

2017 – 19 **Masters in Physics**, *University of Madras*, *CGPA – 9.10*.

2014 – 17 **Bachelors in Physics**, *University of Madras*, *CGPA – 8.80*.

March 2013 **Senior Secondary**, *The Hindu Colony Chellammal Vidyalaya*, Chennai, *Score – 90.8%*.

March 2011 **Secondary**, *The Hindu Colony Chellammal Vidyalaya*, Chennai, *CGPA – 10.0*.

Technical skills

Languages	C, R, Python, Julia
Web Development	CSS3, SASS, Bootstrap, Jekyll, Hugo, Gatsby.js
Computation	Qiskit, Pennylane, Quantum ESPRESSO
Typesetting	LaTeX, Markdown, Microsoft Office
Software Packages	Stata, Tableau, pySpark*

Internships

August 2020 - current **Dvara Research.** *Intern*. Extracting macroeconomic variables from household data, using PCA, clustering algorithms: EM, K-means. Dashboarding panel data: 440 variables & 300 million entries each per month with PySpark, SQL, AWS & Tableau. Automated Data Cleaning using STATA .do; Pipeline creation.

April - July 2020 **Modeling Exchange Rate Volatility: Central Bank's response.** *Summer Intern at **Reserve Bank of India***. Modeled the volatility of the Rupee in the foreign exchange market and studied the monetary response function under an inflation-targeting regime, using ARMA, GARCH and EGARCH time-series models.

October 2018 - March 2019 **Electronic structure and thermoelectric properties of intermetallics.** *Masters thesis at **Anna University*** Identified the intermetallic Yb_2Ge as a novel and viable thermoelectric. Performed DFT calculations using Quantum ESPRESSO by implementing both the LDA and GGA algorithms of the Kohn-Sham equation. Corrected the self-interaction error using the Hubbard parameter. Further, obtained its electronic band structure and thermoelectric figure of merit.

April 2016 – June 2016 **On the relation between agM, elliptic integrals & the time period of a pendulum.** *Research Fellow at the **Indian Academy of Sciences.*** Defined a novel algorithm for computing the arithmetic-geometric mean (agM) of two numbers. Proved Gauss' theorem establishing the relation between agM and the elliptic integral using three distinct analytical ways. Derived approximations for the time period of a simple pendulum.

Projects

April 2020 **Patterns in US States in COVID-19 spread using K-Means and Hierarchical clustering.** Investigated an exploratory analysis of US COVID-19 data by performing clustering of states through pandemic, health and economics factors.

March 2020 **Determinants of Life Expectancy.** Analysis of country-level macroeconomics and health related data to determine life expectancy of an individual based on a linear regression model.

May 2020 **What motivates employees to gossip?** An analysis of literature in organizational behaviour pertaining to gossip and its inferences for HR in workplace management.

September 2019 **On WARP, consistency and motives in buying behaviour.** *Project at Madras School of Economics.* Studied motives underlying consumer behaviour, and the impact of poverty on consumer rationality. Conducted an experiment that tests consumer choices for consistency based on the Weak Axiom of Revealed Preference.

May 2018 **Modeling physical systems using the Dirac Delta Function.** *Intern a* ***Madras University*** Solved the Laplace equation. Investigated some properties of the Dirac Delta function including its Fourier and Laplace transforms. Modelled impulse systems such as the hammer-blow response of a mass-spring system.

September 2014 **Simulating nonlinear dynamics exhibited by the double pendulum.** Constructed a double pendulum and simulated its dynamics using Mathematica. Solved the underlying differential equations through numerical methods.

May 2012 **Models using Chaotic maps.** *Research Intern at* ***IIT Madras****.* Studied chaotic maps such as the logistic map & Baker's map and linked them to biological population growth models. Explored the dynamics of physical systems using this analogy.

Achievements

Class of 2019 Proficiency Prize at DG Vaishnav College for emerging as topper in Masters program.

Class of 2017 Proficiency Prize at RKM Vivekananda College for emerging as topper in the Bachelors program.

2014-15 NIUS Science Fellow at HBCSE, TIFR, Mumbai, for pursuing study and research of Quantum Mechanics, Astrophysics and Particle Physics.

2012 Research Science Initiative fellow at IIT Madras for research in Non-linear Dynamics.

2010-11 INSPIRE Award by the Department of Science and Technology, Govt. of India.

Position of Responsibility

2017-19 Headed the Physics Club at DG Vaishnav College in organizing inter-collegiate events such as lectures and seminars.

2018 Treasurer for the National Level Molecular Docking Conference at DG Vaishnav College.

Relevant Course-work

Data Science Machine Learning, Linear Algebra, Probability and Statistics.

Finance Corporate Finance, Econometrics, Time-series Analysis, Macroeconomics.

Management Strategic Management, Marketing, Organizational Behaviour and HR Management.

Physics Quantum Mechanics, Statistical Physics, Classical Mechanics, Condensed Matter Physics, Mathematical Physics, Electrodynamics.

Math Ordinary and Partial Differential Equations, Real and Complex Analysis, Numerical Methods, Tensors.

Interests

- Machine Learning
- Stochastic Processes
- Web Development
- Quantum Computing
- Quantitative Finance
- Time Series Analysis