

Rohith Krishna

Curriculum Vitae

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Education

- June 2019 - **PGDM in Research and Business Analytics**, Madras School of Economics, Pursuing. CGPA – 9.00.
- 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, Matlab, Mathematica
- Web Development CSS3, SASS, Bootstrap, Jekyll, Gatsby.js, Node.js
- Computation Quantum ESPRESSO, TBLMTO, Gaussian, XCrysDen.
- Typesetting L^AT_EX, Markdown, Microsoft Office

Internships

- 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 - **Electronic structure and thermoelectric properties of intermetallics.** Masters thesis at **Anna University** Identified the intermetallic Yb₂Ge 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.
- March 2019
- April 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.
- June 2016

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 at 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.
- November 2014
- 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.
- June 2012

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

- 2017-2019 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.
- Physics Quantum Mechanics, Statistical Physics, Classical Mechanics, Condensed Matter Physics, Mathematical Physics, Electrodynamics.
- Management Strategic Management, Marketing, Organizational Behaviour and HR Management.
- Math Ordinary and Partial Differential Equations, Real and Complex Analysis, Numerical Methods.

Interests

- Algorithms and Data Structures
- Web Development
- Monetary Policy Implementation
- Quantum Computing
- Machine Learning
- Time Series Analysis