Kshitish Ghate

(+91)9535848905 | ghatekshitish@gmail.com | f20180364@goa.bits-pilani.ac.in | linkedin.com/in/kshitish-ghate/

EDUCATION

Birla Institue of Technology and Science, Pilani — Goa, India
M.Sc. in Economics and B.E. in Computer Science, CGPA: 8.78/10.00 — *Aug. 2018 – Present*

EXPERIENCE

Amazon - Alexa AI — Bangalore, India
Applied Scientist Intern | Supervisors: Anurag Dwarakanath, Anjali Shenoy — *Aug. 2022 – Present*
- Working on implementing a novel training methodology and model architecture to address the problem of classifying long tail data in natural language understanding tasks, drawing from the literature on Curriculum Learning.

Implicit Social Cognition Lab, Harvard University — Cambridge, Massachusetts
Research Assistant | Supervisors: Prof. Mahzarin Banaji, Dr. Tessa Charlesworth — *March 2022 – Present*
- Investigating the impact of individual social identities in propagating intersectional biases in language models.
- Working on identifying causal relationships between aggregate measures of implicit bias and language structures using pretrained and contextualized word embeddings, and trying to further understand their implications on downstream AI tasks.

Cambridge Centre for Alternative Finance, Cambridge Judge Business School — Cambridge, UK
Research Intern | Supervisor: Tania Ziegler, CCAF Benchmarking Lead — *June 2021 – June 2022*
- Part of the Global Benchmarking Research team at CCAF; involved in automating the data extraction process and streamlining the workflow associated with data analysis.
- Published the Global COVID-19 Fintech Market and Impact Resilience Study detailing the analysis of the impact of COVID-19 on the Fintech ecosystem.

Council of Scientific & Industrial Research, CEERI — Pilani, India
Summer Research Intern | Advisor: Dr. Chitra Gautam — *May 2020 – July 2020*
- Implemented various Statistical and Deep Learning models such as Exponential Smoothening, SEIRD , Logistic, Holt's Linear Trend, Holt's Winter Seasonal, Single Exponential Smoothing (SES), Long Short Term Memory (LSTM), Gated Recurrent Unit (GRU) and ARIMA for predicting the growth rate of COVID-19 Patients in India, both on a nationwide and statewide basis.
- Compared and interpreted the results with respect to the accuracy of the predictions.

PUBLICATIONS

- Kshitish Ghate, Aylin Caliskan, Mahzarin R. Banaji, Tessa E. S. Charlesworth, (in preparation), "Identifying and validating flexible methods for the study of intersectional stereotypes in language".

- Tessa E. S. Charlesworth, Kshitish Ghate, Aylin Caliskan, Mahzarin R. Banaji, (in preparation), "Stereotypes at the intersection of class, gender, and race: Emergence and loss are revealed in large language corpora".

- Kshitish Ghate, Hrithik Nambiar, Surjya Ghosh, Vaskar Raychoudhury, Snehanshu Saha, (submitted), "SLAB: A Self-supervised Label Generation Framework to Reduce Annotation Overhead". IEEE Transactions on Affective Computing.

- Aswini Kumar Mishra and Kshitish Ghate, (2022), "Dynamic connectedness in non-ferrous commodity markets: Evidence from India using TVP-VAR and DCC-GARCH approaches". Resources Policy, 76, 102572. https://doi.org/10.1016/j.resourpol.2022.102572

- Kakade, Kshitij, Aswini Kumar Mishra, Kshitish Ghate, and Shivang Gupta, (2022), "Forecasting Commodity Market Returns Volatility: A Hybrid Ensemble Learning GARCH-LSTM based Approach." Intelligent Systems in Accounting, Finance and Management. https://doi.org/10.1002/isaf.1515

- Aswini Kumar Mishra, Kshitish Ghate, Jayashree Renganathan, Joushita J. Kennet, and Nilay Pradeep Rajderkar, (2022), "Rolling, recursive evolving and asymmetric causality between crude oil and gold prices: Evidence from an emerging market." Resources Policy 75, 102474 https://doi.org/10.1016/j.resourpol.2021.102474

- Byomakesh Debata, Kshitish Ghate and Jayashree Renganathan, (2021), "COVID-19 pandemic sentiment and stock market behavior: evidence from an emerging market", Review of Behavioral Finance, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/RBF-05-2021-0083

Academic Interests

AI for Social Good | Ethics in AI | Behavioural Economics | Causal Inference in Statistics

Projects

Semi-Supervised Learning for Tabular Data Annotation
July 2021 - Present

Advisors: Dr. Snehanshu Saha, Dr. Surjya Ghosh
- Worked on classifying wheelchair-accessible routes by using manually collected vibration data.
- Extending the work to automatically annotate continuos emotion signal data collected as part of the CASE and K-EmoCon datasets.
- Investigating the application of self supervised learning algorithms using a novel reconstruction loss to classify large proportions of unlabelled tabular data.

COVID-19 Pandemic Sentiment and Stock Market Behavior
June 2020 – Dec 2021

Advisor: Dr. Byomakesh Debata
- Investigated the role of COVID-19 Pandemic Sentiment in the determination of Stock Market Behavior by constructing a Newspaper headlines and Google Search Volume Based attention index to serve as a proxy for the public's attention to the Pandemic
- Conducted a multi-timescale non-linear causality analysis between the attention indices and returns of major Indian Sectoral Indices.
- As an extension of the study, explored the non-linear causal relationships in terms of frequency connectedness between pandemic sentiment and markets returns across 30 countries globally.

Commodity Market Behaviour and Connectedness
Dec 2020 – Aug 2021

Advisor: Dr. Aswini Kumar Mishra
- Employed a hybrid ensemble Learning GARCH-LSTM based approach to conduct an analysis of volatility dynamics of Non-Ferrous metals in the Indian market.
- Demonstrated the superior performance of hybrid GARCH - LSTM, EGARCH - LSTM and TGARCH - LSTM ensemble learning based models in forecasting and interpreting of the same.
- Studied the dynamic connectedness between the metal markets by employing the TVP-VAR framework to analyse return spillovers and the DCC-GARCH approach to investigate the volatility spillovers.
- Conducted a study to investigate the time-varying causal relationships among spot and futures prices of crude oil and gold markets.

Notable Achievements

- Conferred with the National Talent Search Examination (NTSE) Scholarship, conducted by the National Council of Educational Research and Training (NCERT), India, in 2015-16.

- Awarded the runner's up prize for participating in the Youth Climate Summit - 2015, at Visvesvaraya Industrial and Technological Museum.

Teaching Experience

Teaching Assistant | Applied Econometrics
Jan 2022 – May 2022

Supervisor: Dr. Aswini Kumar Mishra

Teaching Assistant | Securities Analysis and Portfolio Management
Aug 2021 – Dec 2021

Supervisor: Dr. RL Manogna

Extracurricular Activities

Social Services Volunteer
Jun 2019 - Jul 2019

The Akshaya Patra Foundation
- Volunteered with AIKYA, the youth initiative of The Akshaya Patra Foundation. Was involved in the School and Student Transformation project. Worked on creating study modules in Maths and Science that would be used to aid in teaching at government schools in Bangalore. Carried out diet surveys and taught English, Science and Maths classes for higher primary students in various government schools throughout the city.

Senior Consultant
Jun 2020 - May 2021

180DC, BITS Pilani, Goa
- Involved as a Senior Consultant at 180DC BITS Goa, a branch of the world's largest university-based pro bono consultancy, which aims at providing services to non-profits, NGOs, and government stakeholders. Was part of projects that seeked to help NGOs in the education and financial inclusion sectors.