Sarvajanik College of Engineering and Technology
Department of Computer Engineering

Expert Talk organized by Department of Computer Engineering under R & D Cell

Objectives of the Talk: To make students well-aware about the Code LLMs, their significance in addressing code quality challenges, popular use cases, community progress, recent advancements, and future prospects from a renowned industry expert.

Date & Day: 5th April, 2024 (Friday)

Time: 2:00 PM to 3:30 PM

Venue: Online Google Meet

Coordinator: Prof. (Dr.) Nirali Nanavati, Department of Computer Engineering

Speaker Profile:

Ms. Hima Patel is the Senior Technical Staff Member and Research Manager at **IBM Research**. She is with IBM Research since 7 years. Prior to IBM, Ms. Patel has worked as Analytics Manager, **Visa**. She was also the Data Scientist with **Shell Research** and Research Engineer and Image Analyst at **GE Global Research and GE Health Care** respectively. She is an alumni of **DAIICT**, Gandhinagar. Ms. Hima Patel is a seasoned AI practitioner with hands on experience in developing algorithms using machine learning, computer vision and NLP techniques for problems in healthcare, oil and gas and enterprise AI domains.

Summary of the Event:

The Department of Computer Engineering organized an expert talk online under R&D Cell, SCET in association with SSIP & IIC Cell of SCET on 5th Apil 2024. The talk was attended by approximately 40 students from 3rd and 4th year. The expert talk by Ms. Hima Patel commenced with an exploration of the challenges associated with code quality and the role of Code LLMs in mitigating these challenges. It provided attendees with a deep dive into the world of Code LLMs, covering various aspects such as development lifecycle, use cases, community progress, and recent advancements.

The session discussed the fundamental principles behind LLMs and their applications in software development. Various use cases of Code LLMs were explored, including code completion, bug detection, refactoring, documentation generation, and code summarization. Real-world examples were presented to illustrate the practical applications of LLM technology. The talk delved into the collaborative efforts driving the progress of Code LLMs within the research and developer community. It highlighted key milestones, breakthroughs, and initiatives contributing to the advancement of LLM technology.

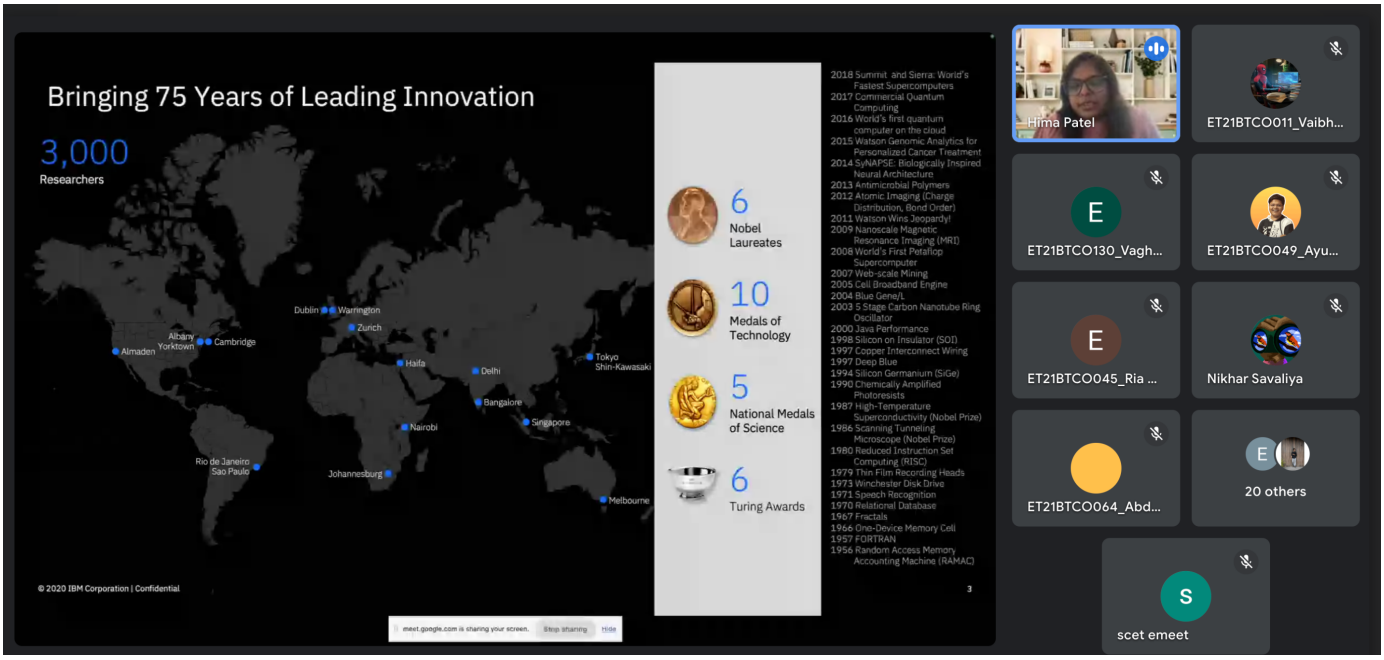
Participants were provided with insights into recent advancements in Code LLM technology, including the release of the Claude model, which showcased superior performance compared to previous models. Discussions also revolved around the potential for further improvements and future prospects in LLM development. The talk concluded with an interactive Q&A session, allowing participants to engage with the speaker and delve deeper into topics of interest. Questions regarding code retrieval, context window size considerations, and the trajectory of LLM development were addressed during this session.

Further, the speaker Ms. Hima Patel informed the students about internship opportunities at IBM research and the details of the process and the work they would be undertaking.

Acknowledgement:

We extend our sincere gratitude to our honorable principal Dr. Hiren Patel for permitting us to organize this talk. His constant support and guidance inspire us to organize such enlightening events for our fellow students and colleagues. We are also thankful to Dr. Utpal Pandya, Dean, R&D, Dr. Dipali Kasat, HOD, Department of Computer Engineering, Dr. Mayuri Mehta, R&D Representative for encouragement and prompt support always. We would also like to thank Ms. Hima Patel, IBM Research for accepting our invitation and sparing her valuable time to be with us for the session. Sincere thanks to all the student volunteers for making necessary arrangements for this session. Last but not the least, we are very thankful to all the participants for their active presence during the session.

Photos :


Bringing 75 Years of Leading Innovation
3,000
Researchers
Albany
Yorktown
Almaden
Cambridge
Dublin
Warrington
Zurich
Haifa
Delhi
Tokyo
Shin-Kawasaki
Bangalore
Nairobi
Singapore
Rio de Janeiro
Sao Paulo
Johannesburg
Melbourne
6
Nobel Laureates
10
Medals of Technology
5
National Medals of Science
6
Turing Awards
2018 Summit and Sierra: World's Fastest Supercomputers
2017 Commercial Quantum Computing
2016 World's first quantum computer on the cloud
2015 Watson Genomic Analytics for Personalized Cancer Treatment
2014 SyNAPSE: Biologically Inspired Neural Architecture
2013 Antimicrobial Polymers
2012 Atomic Imaging (Charge Distribution, Bond Order)
2011 Watson Wins Jeopardy!
2009 Nanoscale Magnetic Resonance Imaging (MRI)
2008 World's First Petaflop Supercomputer
2007 Web-scale Mining
2005 Cell Broadband Engine
2004 Blue Gene/L
2003 5 Stage Carbon Nanotube Ring Oscillator
2000 Java Performance
1998 Silicon on Insulator (SOI)
1997 Copper Interconnect Wiring
1997 Deep Blue
1994 Silicon Germanium (SiGe)
1990 Chemically Amplified Photoresists
1987 High-Temperature Superconductivity (Nobel Prize)
1986 Scanning Tunneling Microscope (Nobel Prize)
1980 Reduced Instruction Set Computing (RISC)
1979 Thin Film Recording Heads
1973 Winchester Disk Drive
1971 Speech Recognition
1970 Relational Database
1967 Fractals
1966 One-Device Memory Cell
1957 FORTRAN
1956 Random Access Memory Accounting Machine (RAMAC)
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3
meet.google.com is sharing your screen.
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Hima Patel
ET21BTCO011_Vaibh...
ET21BTCO130_Vagh...
ET21BTCO049_Ayu...
ET21BTCO045_Ria ...
Nikhar Savaliya
ET21BTCO064_Abd...
20 others
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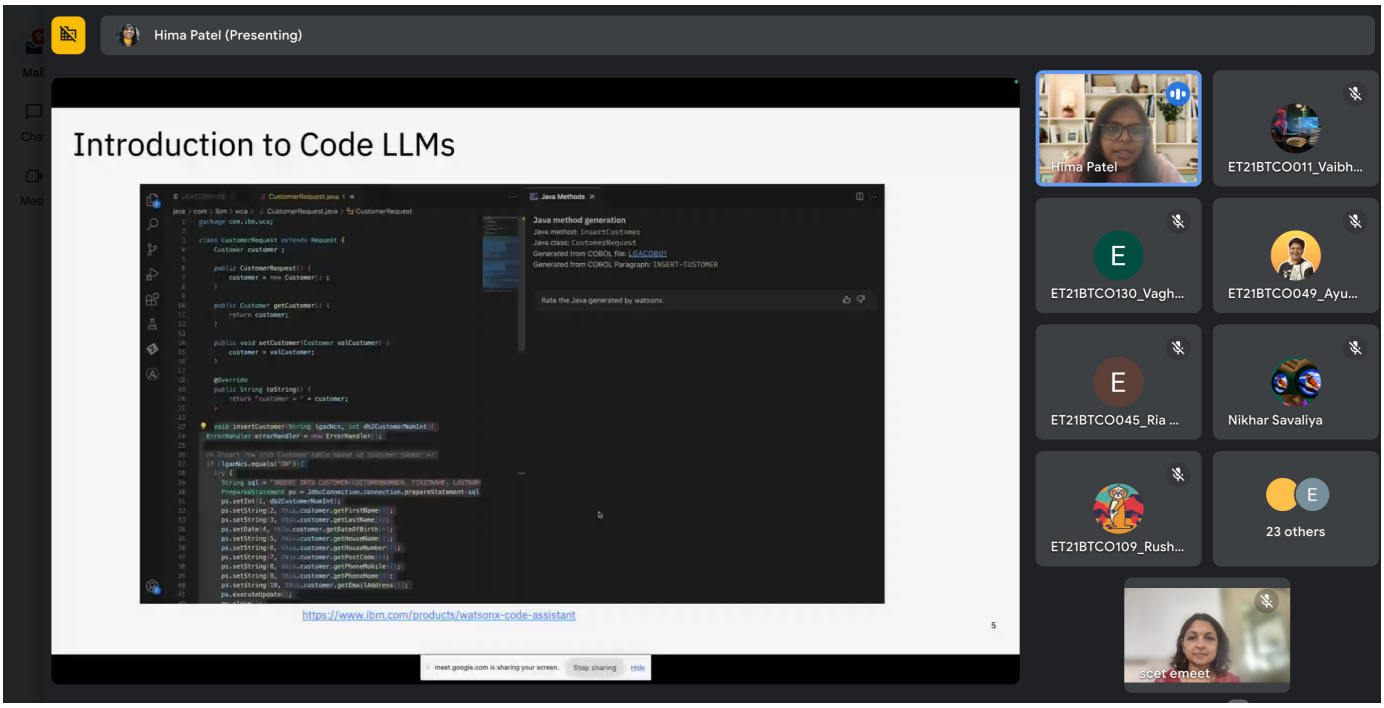
Hima Patel (Presenting)
Introduction to Code LLMs
Java Methods
Java method generation
Java method: insertCustomer
Java class: CustomerRequest
Generated from COBOL file: LGACDB01
Generated from COBOL Paragraph: INSERT-CUSTOMER
Rate the Java generated by watsonx.
https://www.ibm.com/products/watsonx-code-assistant
5
meet.google.com is sharing your screen.
Stop sharing
Hide
Hima Patel
ET21BTCO011_Vaibh...
ET21BTCO130_Vagh...
ET21BTCO049_Ayu...
ET21BTCO045_Ria ...
Nikhar Savaliya
ET21BTCO109_Rush...
23 others
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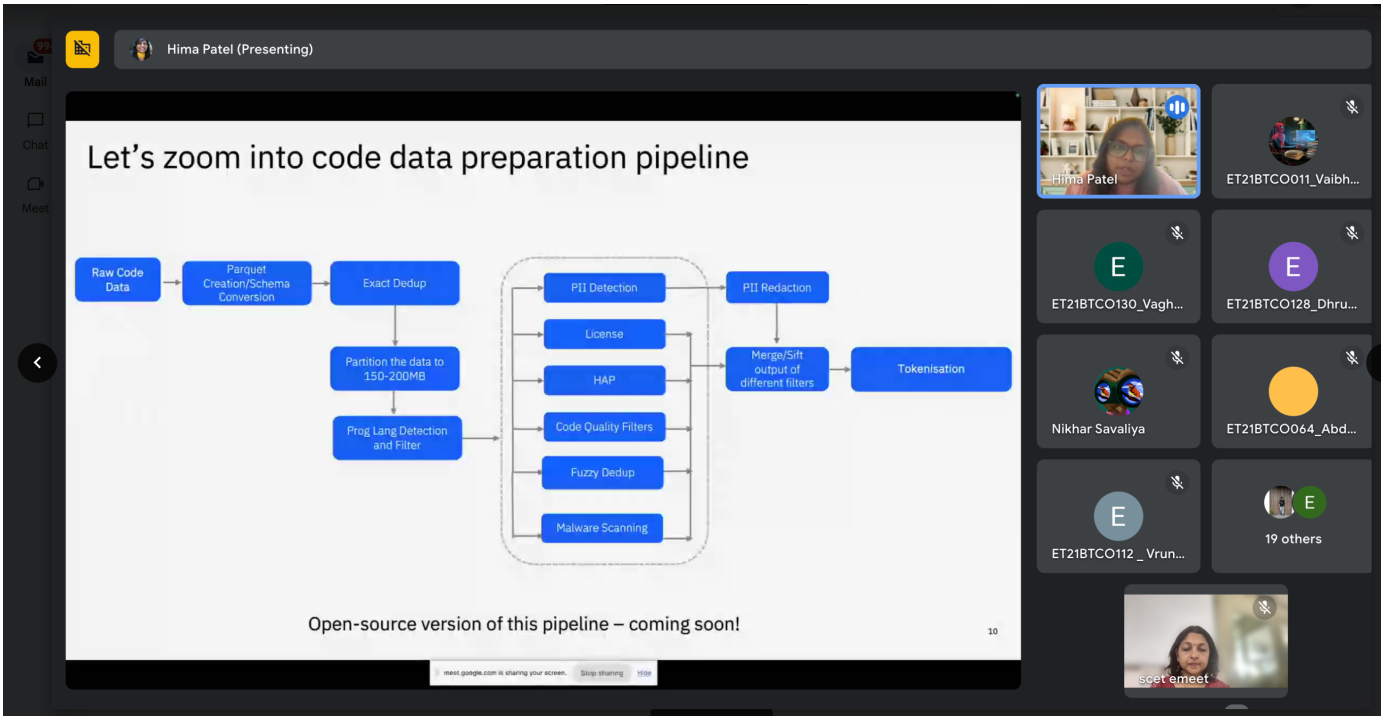

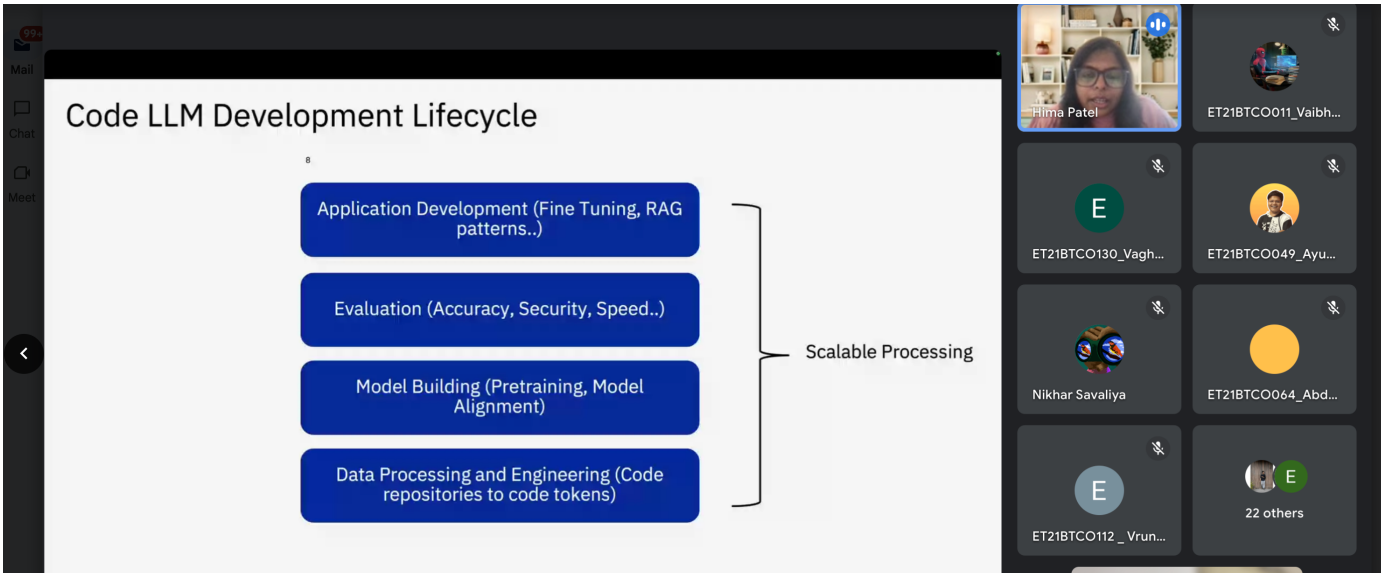

Compiled by: Dr. Nirali Nanavati