Quantum AI and NLP 2025 Conference

Indiana University at Bloomington, Indiana, USA

Website: https://qnlp.ai/

Dates: August 6-8, 2025

Location: IU Memorial Union

Schedule

This is a preliminary schedule and list of keynotes, panels, talks, and posters. The final schedule will be posted and updated on the website.

August 6, 2025

Reception

starting 6 PM, 06 Aug 2025

IU Memorial Union, Tudor Room, 900 E 7th St, Bloomington, IN 47405

August 7, 2025

9 AM – 12 PM Conference and Keynotes

1:30 – 2:30 PM Panel

2:30 – 6 PM Conference and Keynotes

7 – 9 PM Special Quantum Rock Event

August 7, 2025

9 am – 12 PM Conference and Keynotes

1:30 – 2:30 PM Panel

2:30 – 6 PM Conference and Keynotes

Keynote Speakers

Dr. Monica VanDieren (NVIDIA)

Sr. Technical Marketing Engineering for Quantum Computing and HPC; Created and launched the CUDA-Q Academic initiative

Dr. Bob Coecke (Quantinuum)

Chief Scientist @ Quantinuum

Dr. Kharen Musaelian (Qognitive, Inc.)

President and Co-Founder of Qognitive, Inc. and President/CIO, and Co-Founder of Duality Group

Dr. Ismael Faro (IBM Quantum)

Vice President of Quantum and AI, IBM

Dr. William Chappell (Microsoft)

Vice President, CTO, Microsoft Strategic Missions and Technologies

Talks

Quantum versus Markov models of bistable perception

Jerome Busemeyer[1], Makiko Yamada[2], Rong Zheng[1]
[1] Indiana University, USA; [2] Riken Center for Brain Research, Japan

Incorporating Content-based Features into Quantum Knowledge Graph Embeddings

Jonas Hendl & Michael Faerber
Technical University Dresden, Germany

System Level Intervention for AI-Supported Decision-Making: A Quantum Cognition Perspective

Scott Humr & Mustafa Canan
Naval Postgraduate School, USA

Quantum-Inspired Attention for Efficient Face Recognition

Aayush Gauba
Southern Illinois University Edwardsville, USA

Quantum Graph Transformer for NLP Sentiment Classification

Shamminuj Aktar[1], Andreas Bärtschi[1], Stephan Eidenbenz[1], Abdel-Hameed A. Badawy[2]
[1] Los Alamos National Laboratory, USA); [2] New Mexico State University, USA

Cirquitous: A Possible Exploration of Solving Quantum Circuit Challenges Using Human Natural Language

Mithun Paul
University of Arizona, USA

A quantum semantic framework for natural language processing

Christopher Agostino[1], Quan Le Thien[2], Molly Apsel[2], Denizhan Pak[2], Elina Lesyk[3], Ashibari Majumdar[4]
[1] NPC Worldwide; [2] Indiana University, USA; [3] Independent Consultant; [4] University of Notre Dame, USA

Computational Modeling of Contextuality: Implications to Quantum Cognition

Sahil Imtiyaz & Serafim Rodrigues
Basque Center for Applied Mathematics, Spain

Entanglement-Guided Stochastic Regularization for Robust Deep Learning
Aayush Gauba
Southern Illinois University Edwardsville, USA

An Efficient Quantum Classifier Based on Hamiltonian Representations
Federico Tiblias[1], Anna Schroeder[2], Yue Zhang[3], Mariami Gachechiladze[2], Iryna Gurevych[1]
TU Darmstadt, Germany: [1] UKP Lab, [2] Quantum Computing Group; [3] School of Engineering, Westlake University, China

Compact Quantum Circuits for Martinican Creole LID: A Typologically Informed Proof-of-Concept
Ludovic Mompelat
University of Miami, USA

SA-DQAS: Integrating Differentiable Quantum Architecture Search with Transformers for Enhanced Variational Quantum Algorithms
Yize Sun[1],[2] , Jiarui Liu[1], Zixin Wu[1], Yunpu Ma[1], Volker Trep[1]
[1] Ludwig-Maximilians-Universität München, Germany; [2] Siemens AG, Germany

Toward an Algebraic Implementation of a Language Faculty
Juan Uriagereka
University of Maryland, USA

Quantum Machine Learning Next-gen wireless: future and path ahead
Shalini L & Srividya Bhat
Sahyadri College of Engineering and Managemengt, India

Enhancing Interpretability of Quantum-Assisted Blockchain Clustering via AI Agent-Based Qualitative Analysis
Yun-Cheng Tsai[1], Yen-Ku Liu[1], Samuel Yen-Chi Chen[2]
[1] National Taiwan Normal University; [2] Wells Fargo

Quantum - Augmented Robust Automatic Speech Recognition
Tapabrata Mondal, Debjit Dhar, Soham Lahiri, Sivaji Bandyopadhyay
Jadavpur University, India

Quantum AI for Ethical Decision-Making in Medical Education
Kliment Chakarovski & Emilija Velinova
FPMI, TU Sofia, Bulgaria

Quantum Curiosity: Quantum Curious Feature Selection
James Graves & Goren Gordon
Indiana University at Bloomington, USA

Quantum NLP model on Natural Language Inference
Ling Sun
Indiana University at Bloomington, USA

Old Wine in New Bottles: Using Classical Word Embeddings in Quantum NLP Systems
Damir Cavar, Koushik Reddy Parukola, James Graves, Shane Sparks
Indiana University at Bloomington, USA

Hypertokens: Holographic Associative Memory in Tokenized LLMs
Christopher Augeri
Sloop

Quantum Recognition Heuristics: A New Direction of Quantum Cognitive Modeling
Jiaqi Huang & Jerome Busemeyer
Indiana University at Bloomington, USA

QCNN-MFND: A Novel Quantum CNN Framework for Multimodal Fake News Detection in Social Media
Arya Suneesh & Balasubramanian Palani
Indian Institute of Information Technology Kottayam, India

Extending the Frontiers of QNLP Beyond English: Grammar-Sensitive Pipeline for Hindi Sentiment Classification Using Compositional Quantum Models
Gautami Naik[1], Rishi Koushik Reddy Thippireddy[1], Naman Srivastava[2], Parishri Shah[1], Ravi Raj[1], Sunil Saumya[1], Aswath Babu Hanumantharayappa[1]
[1] IIIT Dharwad, [2] IISc Bangalore, India

Posters

Scientific Literature Assistants
John McNally
Wolfram Research, USA

Hybrid Quantum-Classical Critics in SAC Reinforcement Learning for Wake-Adaptive Swimming and Airfoil Control
Dhanush Shenoy, Ziv Chen, Steven Frankel
Technion, Israel

Beyond Pairs: Generalizing the Quantum Question Equality to Multiple Observables
Michael Schnabel
Vanderbilt University, USA

QPolypNet: A Quantum-Inspired Deep Learning Model for Enhanced Polyp Segmentation
MD Majedul Islam[1], Rashik Shahriar Akash[2], Jing (Selena) He[1]
[1] Kennesaw State University, USA; [2] Daffodil International University, Bangladesh

Objective-Free Local Learning & Emergent Language Structure in Thinking Machines
Paul Eugenio
Indiana University at Bloomington, USA

Oscillating Field Perturbation: A Quantum Model of Arousal and Cognitive Control
Jiaqi Huang[1], Joseph Fluegemann[2], Jonathan Cohen[2], Jerome Busemeyer[1]
[1] Indiana University at Bloomington, USA; [2] Princeton University, USA

Student Posters

TO BE ANNOUNCED