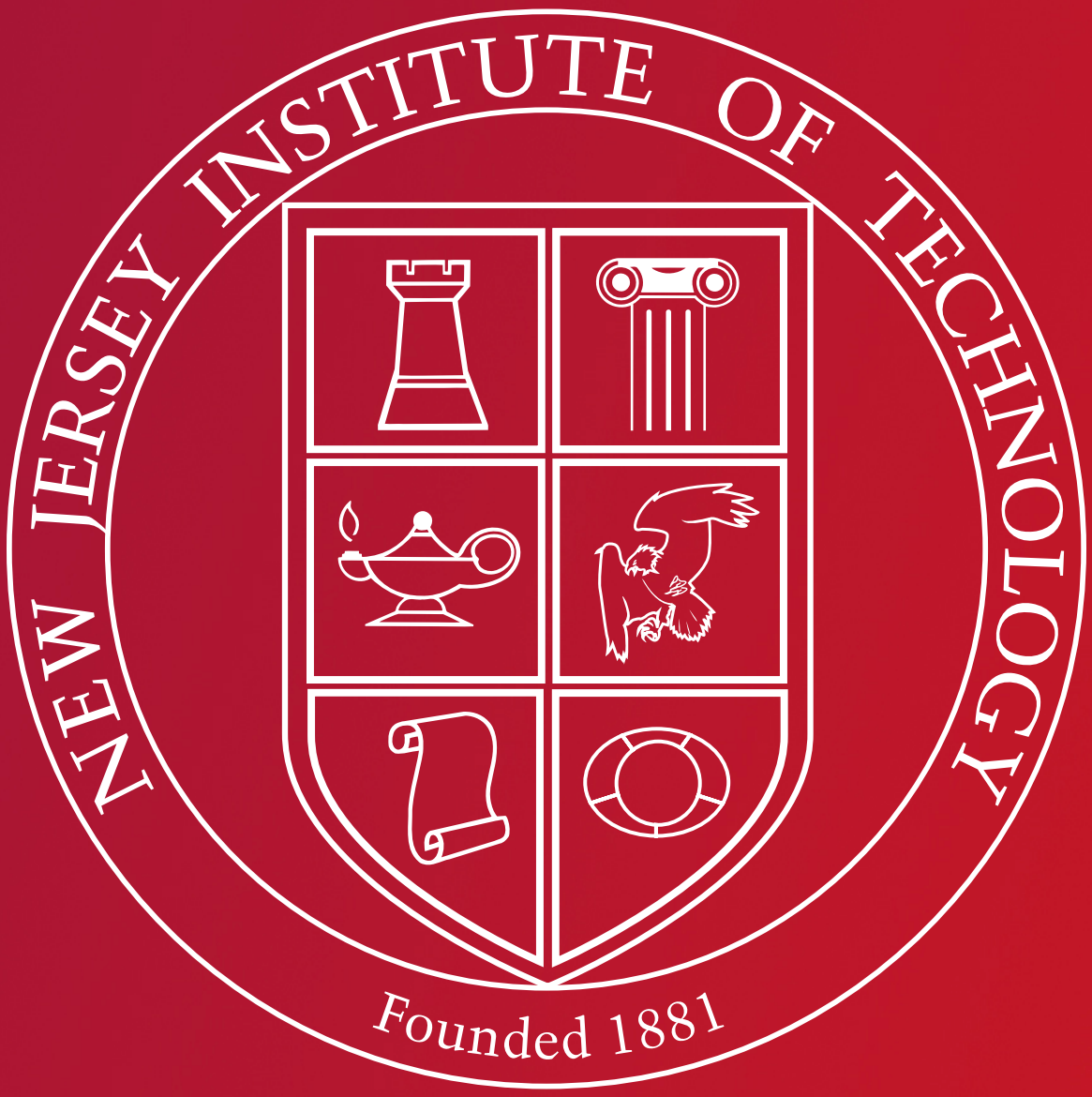

NEW JERSEY INSTITUTE OF TECHNOLOGY

COMMENCEMENT

CONFERRAL OF DOCTORAL DEGREES

MONDAY, MAY 19, 2025 | 4:00 P.M.

Candidates for Doctoral Degrees

DOCTOR OF PHILOSOPHY

BIOLOGY

(Degree conferred jointly by NJIT and Rutgers-Newark, Newark, New Jersey)

Omar Itani

Dissertation: The Role of Excitatory Neuromodulation in Managing Variability of Neuro System Output

Advisors: Farzan Nadim, Ph.D.; Horacio G. Rotstein, Ph.D.

Smita More-Potdar

Dissertation: Robustness and Plasticity: Two Sides of the Same Coin, Long-Term Effects of Neuromodulation on Ionic Currents and Network Activity

Advisor: Jorge Golowasch, Ph.D.

BIOMEDICAL ENGINEERING

(Degree conferred jointly by NJIT and Rutgers Biomedical and Health Sciences, Newark, New Jersey)

Rahman Baboli

Dissertation: Childhood Neuroanatomical Markers of Familial and Non-Familial Attention-Deficit/Hyperactivity Disorder

Advisor: Xiaobo Li, Ph.D.

Donna Y. Chen

Dissertation: Investigating the Neurovascular Correlates of Cognitive Function in Individuals with Spinal Cord Injury Using Functional Near-Infrared Spectroscopy

Advisors: Bharat Biswal, Ph.D.; Hai Sun, Ph.D.

Elvan Dogan Kumtepe

Dissertation: 3D Bioprinted Solid Tumor Spheroid Modeling: Design of Bioinks

Advisor: Amir Miri Ramsheh, Ph.D.

Sebastian N. Fine

Dissertation: The Interplay of Accommodation and Oculomotor Vergence Within Young Adults with Binocularly Normal Vision and Typically-Occurring Convergence Insufficiency

Advisors: Tara L. Alvarez, Ph.D.; Xiaobo Li, Ph.D.

Alexandra Griffith

Dissertation: Engineering of Macroscale Clearance to Nanoscale Microbiocidal Therapeutics That Reduce Oral Pathogen Load

Advisor: Vivek Kumar, Ph.D.

Christopher J. Morris

Dissertation: Development of a Novel Quantitative Assessment for Intermittent Exotropia

Advisors: Tara L. Alvarez, Ph.D.; Chang Yaramothu, Ph.D.

Jarin Tusnim

Dissertation: Engineering a 3D Hollow Collagen Gel Model to Explore Potential Therapeutics for Peripheral Nerve Regeneration

Advisor: Jonathan M. Grasman, Ph.D.

BUSINESS DATA SCIENCE

Roshani Bharati

Dissertation: Understanding Consumer Perception and Behavior in Online Grocery Shopping: Insights from Three Data Driven Studies

Advisor: Jorge E. Fresneda Fernandez, Ph.D.

Xiangyu Gao

Dissertation: Application of Artificial Intelligence to Improve the Effectiveness and Efficiency of Patient Engagement

Advisor: Yi Chen, Ph.D.

Shaoqing Zhang

Dissertation: Understanding the Role of Social Media in Finance

Advisors: Xinyuan Tao, Ph.D.; Zhipeng Yan, Ph.D.

CHEMICAL ENGINEERING

Seyed Mahmoud Arzideh

Dissertation: Investigation of Equibiaxial Elongational Rheology of Polymer Melts

Advisor: David Venerus, Ph.D.

Purvam Mehulkumar Gandhi

Dissertation: Gas-Generating Reactive Materials: Design, Evaluation and Effect of Morphology on Their Ignition and Combustion

Advisor: Edward L. Dreizin, Ph.D.

Hadis Gharacheh

Dissertation: Development of Composite Ink Formulations for Bone Tissue Engineering

Advisor: Murat Guvendiren, Ph.D.

Hamidreza Heidari

Dissertation: Mechanistic Modeling of the Nanomilling Process for Producing Pharmaceutical Nanosuspensions

Advisors: Ecevit Bilgili, Ph.D. (posthumous); Edward L. Dreizin, Ph.D.

Elif Irem Senyurt

Dissertation: Decomposition of Diisopropyl Methylphosphonate (DIMP) Exposed to Elevated Temperatures and Combustion Products of Reactive Materials

Advisors: Edward L. Dreizin, Ph.D.; Mirko Schoenitz, Ph.D.

Information in this program is compiled prior to final certification of candidates for graduation. Only the diploma and certified transcript of each student are official documents which attest to the granting of a degree.

Candidates for Doctoral Degrees

DOCTOR OF PHILOSOPHY

CIVIL ENGINEERING

Xi Hu

Dissertation: Digital Twins for Built Asset Management: Integrating Artificial Intelligence, Robotics, Lidar-Based 3D Mobile Mapping, Panoramic Imaging, IoT-Enabled Smart Sensing, and Building Information Modeling

Advisor: Rayan H. Assaad, Ph.D.

Yasser Jezzini

Dissertation: A Data-Driven Construction Planning and Economics Framework for Enhancing the Delivery of Construction Projects During Uncertain Market Trends: Leveraging Artificial Intelligence, Modeling, and Simulation

Advisor: Rayan H. Assaad, Ph.D.

Yan Zhang

Dissertation: Exploring the Performance of Low-Embodied Carbon Concrete: An Integrated Analysis of Fresh Properties, Mechanical Performance, and Durability

Advisors: Matthew P. Adams, Ph.D.; Matthew J. Bandelt, Ph.D.

COMPUTER ENGINEERING

Weiming He

Dissertation: Robust Scientific Inference with Neural Networks: From Error Induction to Bounded Outputs

Advisor: Qing Liu, Ph.D.

Mahmoud Khaled Ahmed Nazzal

Dissertation: Adversarial Robustness in Advanced Machine Learning Models Integrating Graph Neural Networks and Large Language Models

Advisor: Abdallah Khreishah, Ph.D.

COMPUTER SCIENCE

Oliver Andres Alvarado Rodriguez

Dissertation: On the Design of a Framework for Large-Scale Exploratory Graph Analytics

Advisor: David A. Bader, Ph.D.

Ehsan Beikihassan

Dissertation: Knowledge Diffusion in Networks of Artificial Learners

Advisors: Ioannis Koutis, Ph.D.; Amy Hoover, Ph.D.

Kuang Du

Dissertation: Machine Learning Methods for Pattern Recognition Analysis of Genomic and Molecular Data

Advisor: Zhi Wei, Ph.D.

Wenlu Du

Dissertation: Advancing Smart Traffic Management Systems Through Reinforcement Learning: Optimizing Traffic Signal Control for Urban Mobility and Safety

Advisors: Jing Li, Ph.D.; Guiling Wang, Ph.D.

Shaoze Fan

Dissertation: Model-based Reinforcement Learning and Deep Learning for Power Converter Circuit Design Automation

Advisor: Jing Li, Ph.D.

Xiaopeng Jiang

Dissertation: Federated Learning Systems for Mobile Sensing Data

Advisor: Cristian Borcea, Ph.D.

Navya Martin Kollapally

Dissertation: A Methodological Framework for Ontology Development, Enrichment, and Application in Natural Language Processing Tasks

Advisors: James Geller, Ph.D.; Yehoshua Perl, Ph.D.

A M Muntasir Rahman

Dissertation: Pushing the Boundaries of Large Language Models: Innovations and Limitations in NLP, Finance, and Mathematics

Advisor: Guiling Wang, Ph.D.

Pritam Sen

Dissertation: Systems for Privacy-Preserving Machine Learning

Advisor: Cristian Borcea, Ph.D.

Yucong Shen

Dissertation: Enriching Vision Representation by Deep Neural Networks and Self-Supervised Learning

Advisor: Frank Shih, Ph.D.

Wei Yao

Dissertation: Decentralized Vehicle Credential Management System Based on Consortium Blockchain

Advisors: Guiling Wang, Ph.D.; Fadi P. Deek, Ph.D.

Junyi Ye

Dissertation: From Neural Networks to Large Language Models: Innovations in Financial AI, Mathematical Reasoning, and Structured Data Representation

Advisor: Guiling Wang, Ph.D.

Shuxin Zhou

Dissertation: Design of Interface Terminologies: Constructing an Interface Terminology for Annotation of Electronic Health Records of a Specific Medical Discipline

Advisors: Yehoshua Perl, Ph.D.; James Geller, Ph.D.

Candidates for Doctoral Degrees

DOCTOR OF PHILOSOPHY

DATA SCIENCE — COMPUTING OPTION

Kaustav Bhattacharjee

Dissertation: Interactive Visualization Workflows for Mitigating Analytical Uncertainty

Advisor: Aritra Dasgupta, Ph.D.

Jun Yuan

Dissertation: Visual Analytic Techniques for Interpretable Algorithmic Ranking Systems

Advisor: Aritra Dasgupta, Ph.D.

Minjuan Zhang

Dissertation: Ensemble Learning Models for Large-Scale Time Series Forecasting in Supply Chain

Advisor: Chase Q. Wu, Ph.D.

ELECTRICAL ENGINEERING

Mohammad Mostafa Al Mahfuz

Dissertation: Colloidal Quantum Dots: A Path Toward Making Mid-Wave Infrared Sensing a Ubiquitous Technology

Advisor: Dong-Kyun Ko, Ph.D.

Qi Kang

Dissertation: Modulation of Cerebellar Cells by Transcranial AC Stimulation in Anesthetized Rats

Advisors: Mengchu Zhou, Ph.D.; Mesut Sahin, Ph.D.

Rami A. Rashid

Dissertation: Underwater Wireless Communication and Signal Detection Using Vector and Scalar Devices: Theory and Experiments

Advisor: Ali Abdi, Ph.D.

Pedro Regalado

Dissertation: Next-Generation Extended Reality Systems with Real-Time Edge Artificial Intelligence and Mobile Computing

Advisor: Tao Han, Ph.D.

Chizhong Wang

Dissertation: Estimation of SpO_2 Levels and Heart Rate from PPG Signals in the Presence of Motion Artifacts

Advisor: Moshe Kam, Ph.D.

ENVIRONMENTAL ENGINEERING

Jianan Gao

Dissertation: Electrified Membrane for Water Treatment and Resource Recovery: Advancing Multiscale Strategies in Gas-Involving Reactions

Advisors: Wen Zhang, Ph.D.; Taha F. Marhaba, Ph.D.

Fangzhou Liu

Dissertation: Microwave Catalysis-Enabled Membrane Processes for Microbial Inactivation

Advisor: Wen Zhang, Ph.D.

Andrew P. Pennock

Dissertation: An Inquiry into the Physics of Mixing and Floc Filtration

Advisors: Taha F. Marhaba, Ph.D.; Monroe Weber-Shirk, Ph.D.

ENVIRONMENTAL SCIENCE

(Degree conferred jointly by NJIT and Rutgers-Newark, Newark, New Jersey)

Hanin Alahmadi

Dissertation: Endocrine Disrupting Properties of Nanoplastics and Phthalates in the Female Reproductive System

Advisor: Genoa Warner, Ph.D.

Wenlong Feng

Dissertation: Enhancing Community Flood Resilience by Incorporating Landscape Hydrological Sensitivity and Connectivity

Advisor: Zeyuan Qiu, Ph.D.

INDUSTRIAL ENGINEERING

Elson Cibaku

Dissertation: Machine Learning and Optimization for Intelligent Decision-Making

Advisor: SangWoo Park, Ph.D.

Bahareh Kargar

Dissertation: Data-Driven Decision Making for Sustainable Planning and Operations of Large-Scale Networks

Advisor: SangWoo Park, Ph.D.

Zijia Wang

Dissertation: Order-Picking Strategies and Efficiency Models for the Fulfillment of Multi-Line E-Commerce Grocery Orders

Advisor: Sanchoy K. Das, Ph.D.

INFORMATION SYSTEMS

Dahlia Musa

Dissertation: Innovations in Virtual Simulation Technology for Healthcare

Advisor: Salam Daher, Ph.D.

Kantida Nanon

Dissertation: Game-Based Learning with Augmented Reality

Advisors: Margarita Vinnikov, Ph.D.; Michael J. Lee, Ph.D.

Wenbo Wang

Dissertation: Fact-Checking as a Multi-Step Process: From Ambiguity Resolution to Claim Validation

Advisor: Yi-fang Brook Wu, Ph.D.

Jiaxing Zhang

Dissertation: Towards Explainable AI on Graph Neural Networks: XAIG

Advisors: Michael J. Lee, Ph.D.; Hua Wei, Ph.D.

Candidates for Doctoral Degrees

DOCTOR OF PHILOSOPHY

Yunhao Zhang

Dissertation: Crowd-Sourced Learning for Computer Graphics Applications

Advisor: Tomer Weiss, Ph.D.

MATERIALS ENGINEERING

Mo Li

Dissertation: First-Principles Study of Ferroelectric Properties and CO_2 Reduction Reaction Capabilities in Two-Dimensional Monolayers and Heterostructures

Advisor: Joshua A. Young, Ph.D.

MATERIALS SCIENCE

Dolores A. Termini

Dissertation: Terahertz Imaging and Non-Destructive Evaluation Methods for Characterizing Additively Manufactured and 3D-Printed Materials

Advisors: John F. Federici, Ph.D.; Ian Gatley, Ph.D.

Huize Xue

Dissertation: Determination of Electrochemical Parameters for Predicting Reaction Mechanism and Algorithmic Approaches to Pain Assessment

Advisor: Omowunmi Sadik, Ph.D.

MATHEMATICAL SCIENCES

(Degree conferred jointly by NJIT and Rutgers-Newark, Newark, New Jersey)

Prianka Bose

Dissertation: Learning Paradigms for Rhythm Detection and Generation Using Mathematical Models, Biophysical and Artificial Neural Networks

Advisor: Amitabha Bose, Ph.D.

Jake S. Brusca

Dissertation: Efficient Numerical Methods for Monge-Ampère Type Equations

Advisor: Yassine Boubendir, Ph.D.

Nicholas J. Dubicki

Dissertation: A Micromagnetic Study of Skyrmions in Thin-Film Multilayered Ferromagnetic Materials

Advisors: Cyrill Muratov, Ph.D.; Michael Siegel, Ph.D.

Samantha G. Evans

Dissertation: A Fast Mesh-Free Boundary Integral Method for Two Phase Flow with Soluble Surfactant and a Study of Electroconvective Flow

Advisors: Michael Siegel, Ph.D.; Michael R. Booty, Ph.D.

Austin Juhl

Dissertation: Certifying Stability in Runge-Kutta Schemes: Algebraic Conditions and Semidefinite Programming

Advisor: David G. Shirokoff, Ph.D.

Moshe C. Silverstein

Dissertation: Large Deviation Theory in Stochastic Processes: Applications to Biological Modeling

Advisor: James MacLaurin, Ph.D.

Chhavi Tyagi

Dissertation: Multi-Label Classification Using Conformal Prediction

Advisor: Wenge Guo, Ph.D.

MECHANICAL ENGINEERING

Keven Alkhoury

Dissertation: Experiments and Modeling of Damage and Inelasticity in Polymeric Materials

Advisor: Shawn A. Chester, Ph.D.

S M Abdullah Al Mamun

Dissertation: Collision Dynamics of Compound Droplets in Microchannels: A Combined Numerical and Data-Driven Study

Advisor: Samaneh Farokhirad, Ph.D.

Yassine Tissaoui

Dissertation: Numerical Techniques for Improving Simulations of Tropical Cyclones

Advisors: Simone Marras, Ph.D.; Stephen R. Guimond, Ph.D.

Yudong Wang

Dissertation: Microfluidic-Based Blood Plasma Self-Separation Enhanced Versatile Biosensor for Multiplex Assay Detection

Advisor: Eon Soo Lee, Ph.D.

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