



DOCTORAL  
COMMENCEMENT  
CEREMONY and  
FACULTY AWARDS

Tuesday, May 25, 2021

Meadowlands Exposition Center • Secaucus, New Jersey





# THE MISSION OF STEVENS



TO INSPIRE, NURTURE  
AND EDUCATE LEADERS  
IN TOMORROW'S  
TECHNOLOGY-CENTRIC  
ENVIRONMENT WHILE  
CONTRIBUTING TO THE  
SOLUTION OF THE  
MOST CHALLENGING  
PROBLEMS OF OUR TIME

## LETTER FROM THE PRESIDENT

To the Stevens Institute of Technology Class of 2021:

This past year at Stevens has been a year like no other. It has been challenging and difficult at times, and I know that many of you were tested in ways that you may never have imagined. But you persevered and you have succeeded. You are graduates of one of the world's premier technological universities.

Today you join an elite group of more than 50,000 accomplished Stevens alumni around the globe. The resiliency and fortitude that you have demonstrated to reach this momentous milestone will serve you well throughout the rest of your lives and careers.

I congratulate you on all that you have achieved and look forward to hearing about the many successes you will undoubtedly have in the years to come. You are the hope and the future, and we are immensely proud of you.

*Per aspera ad astra,*

A handwritten signature in black ink, appearing to read "N. Farvardin". The signature is written in a cursive style with a large initial "N" and a long, sweeping underline.

Nariman Farvardin  
President

## HISTORY OF STEVENS

Stevens Institute of Technology is named for the distinguished family known as “America’s First Family of Inventors.” The Stevens family influenced American engineering for decades, designing steamboats, locomotives, railroad tracks and a host of other technical innovations that powered the new nation.

When inventor Edwin A. Stevens died in 1868, his will provided for the establishment of the university that now bears his family’s name. Two years later, in 1870, Stevens Institute of Technology opened, offering a rigorous engineering curriculum leading to the degree of Mechanical Engineer following a course of study firmly grounded both in scientific principles and the humanities.

Over subsequent decades, Stevens grew by leaps and bounds, evolving from a relatively small four-year undergraduate college of engineering into a leading global technical university with particular strengths in key fields such as computing, artificial intelligence, resilience engineering, complex systems, healthcare and biomedical research, and finance. The university has produced a Nobel Prize winner (Frederick Reines ’39 M.S. ’41) and countless new technologies, products, services and research insights.

In 1971, Stevens opened its doors to undergraduate women for the first time. In 1982, the university became the first major U.S. educational institution to require students to purchase personal computers for use in the classroom. At approximately the same time, Stevens also developed one of the nation’s first intranets, foretelling a revolution in information technology.

Today Stevens continues to grow, expanding enrollment, facilities and research programs. The university’s collaborations with industry and government include two National Centers of Excellence designated by the Department of Homeland Security and the Department of Defense, and Stevens students, faculty and alumni continue to make a significant impact globally — building upon the legacy of its founding family. Through its research in fields such as artificial intelligence, medicine, cybersecurity, healthcare, systems, finance, sustainability and resilience, the university will continue to positively shape the future of global society.

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# ORDER OF CEREMONY

## PRELUDE

## ACADEMIC PROCESSION

### WELCOME

Faculty Marshal

### "THE STAR-SPANGLED BANNER"

President's Ensemble

## CONGRATULATORY REMARKS

CHRISTOPHE PIERRE

Provost and Vice President for Academic Affairs

## FACULTY AWARDS PRESENTATION

## CONFERRAL AND PRESENTATION OF MASTER OF ENGINEERING, HONORIS CAUSA

### PRESIDENT'S ADDRESS

NARIMAN FARVARDIN

President

### COMMENCEMENT ADDRESS

ALLAN E. GOODMAN

## CONGRATULATORY REMARKS

CONSTANTIN CHASSAPIS

Senior Vice Provost for Graduate Education

## CONFERRAL OF DEGREES

### PRESENTATION OF DOCTORAL DEGREES

JEAN ZU

Dean, Charles V. Schaefer, Jr.  
School of Engineering & Science

YEHIA MASSOUD

Dean, School of Systems  
& Enterprises

GREGORY PRASTACOS

Dean, School of Business

### WELCOME TO ALUMNI ASSOCIATION

### CLOSING

Faculty Marshal

### ALMA MATER

President's Ensemble

## RECESSIONAL



## COMMENCEMENT SPEAKER



# Allan E. Goodman

**D**r. Allan E. Goodman is the sixth president of the Institute of International Education (IIE), which marked its centennial in 2019. IIE promotes the exchange of scholars and students; rescues scholars, students and artists from persecution, displacement and crises; conducts research on international academic mobility; and administers the Fulbright Program sponsored by the United States Department of State and more than 200 other corporate, government and privately sponsored programs. U.S. Senate Resolution 146 passed unanimously in April 2019, commending IIE for its work in all these areas.

Dr. Goodman is a member of the Council on Foreign Relations and a founding member of the World Innovation Summit for Education (WISE) and serves on the selection committees for the Rhodes and Schwarzman Scholars and the WISE and Yidan Prizes. He also serves on the Council for Higher Education Accreditation International Quality Group Advisory Council and the Board of Trustees of the Education Above All Foundation. Dr. Goodman has a Ph.D. in government from Harvard, an MPA from the John F. Kennedy School of Government and a B.S. from Northwestern University and is the recipient of honorary degrees from Canadian, European, Japanese, U.K. and U.S. universities. He received decorations for his work in promoting educational exchange and scholar rescue from the governments of France, Germany and Norway and received the first Gilbert Medal from Universitas 21.

Before joining IIE, Dr. Goodman was executive dean of the Walsh School of Foreign Service and a professor at Georgetown University. His books on international relations are published by Princeton, Harvard and Yale University presses. He has served at the Department of State and the Central Intelligence Agency.



## Professor Souran Manoochehri

Professor Souran Manoochehri has been chair of the Department of Mechanical Engineering in the Charles V. Schaefer, Jr. School of Engineering and Science (SES) at Stevens Institute of Technology since 2018. He joined Stevens in 1989 as an assistant professor of mechanical engineering. He served as Associate Dean for Research and Technology in SES from 2004-2009 and directed the Design and Manufacturing Institute (DMI) at Stevens, which he co-founded, from 1990-2004. Prior to joining Stevens, he was a member of the mechanical engineering faculty at Clarkson University in Potsdam, New York.

Dr. Manoochehri is internationally recognized as an expert in numerous areas of design and manufacturing, including additive manufacturing, computer integrated design and manufacturing, and intelligent modeling and optimization. His research on additive manufacturing integrates mathematical modeling, machine learning methods and experimental studies, providing product and process quality assurance. Dr. Manoochehri has been published more than 110 times in peer-reviewed journals and conferences, including a number of high-impact journals. He holds a United States patent and a continuation patent as co-inventor for “Concurrent Engineering Design Tools and Methods.”

Under Dr. Manoochehri’s leadership, the DMI – which focuses on the development and industrial implementation of integrated product development and life-cycle engineering tools and methodologies – received continuous funding from major government and industry sources. Dr. Manoochehri was awarded 49 contracts and grants totaling more than \$30 million as leader of the DMI.

Dr. Manoochehri has drawn widespread praise as a teacher and mentor. He has an enthusiastic following among students in design and manufacturing and has contributed considerably to the mechanical engineering curriculum. He has been the principal

developer of three master’s degree programs at Stevens: Concurrent Engineering, Integrated Product Development and an international program in Manufacturing Technology and Project Management. He has also actively participated in the conception and promotion of the Product-Architecture and Engineering Master’s program. He has supervised and graduated more than 30 graduate students and 12 post-doctoral fellows – a testament to the impact he has had on his field and professional community.

As chair of mechanical engineering, he has played a leading role in elevating the performance and reputation of the department. Under his leadership, the department has substantially expanded research, undergraduate and graduate student enrollments and undergraduate and graduate programs, and increased the number of faculty by recruiting high-quality faculty who are building a strong future for the department. Research awards have grown by 210 percent and research expenditures by 265 percent. In 2019, he initiated the establishment of the Center for Neuromechanics, the first center in the nation with a primary focus on the mechanical behavior of the neural system.

Before serving as department chair, Dr. Manoochehri was the Associate Dean for Research and Technology in SES. In that role, he developed large-scale multi-disciplinary research initiatives and received awards that provided funding for a number of SES faculty members. Between 2004 and 2009, he helped substantially expand the school’s research enterprise and funding. Dr. Manoochehri has also served on and led several departmental committees and has participated in a number of university-wide committees and task forces, including the Business Continuity Planning Committee, the Institute Promotions and Tenure Committee, the Faculty Senate, the Stevens Strategic Planning Implementation Working Group and the Spring 2021 Semester Planning Task Force.



CANDIDATES FOR THE ADVANCED DEGREE OF  
DOCTOR OF PHILOSOPHY

**BENJAMIN ALEXANDER ABRUZZO**

Autonomy and Perception of Robotic Teams  
and Agents for Cooperative Localization  
and Threat Discrimination  
*Mechanical Engineering*

**MOHSEN ALHAZMI**

5G Signal Identification  
Using Deep Learning Algorithms  
*Computer Engineering*

**MOFADAL ALYMANI**

Fading Channel Parameter Estimation  
Using Deep Learning  
*Computer Engineering*

**LUIGI A. BALARINNI**

Novel Maximum-Likelihood Estimator and  
Delay Lock Loop for Radio Pulsar Navigation  
*Mechanical Engineering*

**KONSTANTINOS BATSOS**

Learning-Based Binocular and Multi-View  
Stereo Informed by Domain Expertise  
*Computer Science*

**CHANGJIANG CAI**

Domain Generalization, Adaptive Filtering,  
and Multi-View Consistency in  
End-to-End Stereo Matching  
*Computer Science*

**CANDICE YVONA CASILLAS**

Biochemical and Biophysical Characterization  
of Targets in the MAPK Pathway  
*Chemical Biology*

**MOSTAFA A. ELBAHLOUL**

An Integrated Performance Assessment  
Methodology for the Hypocycloid  
Gear Mechanism in Internal Combustion  
Engine Applications  
*Mechanical Engineering*

**SHICHEN FU**

Two-Dimensional Transition Metal  
Dichalcogenides and Their Heterostructures  
with Room Temperature Ferromagnetism  
for Quantum Emission  
*Mechanical Engineering*

**YUAN JIANG**

Exploiting Uncertain Prior Knowledge  
and Machine Learning for Adaptive  
Signal Detection  
*Electrical Engineering*

**PADMALATHA KAKANURU**

Process Science for Additively Manufacturing  
Silicon Carbide Composites  
*Mechanical Engineering*



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Hybrid Approach for Evaluating the  
Erosion Potential of Coastal Storms  
*Ocean Engineering*

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Framework for the Modeling of Foam  
Transport in Porous Media in the Presence of  
Nanoparticles Validated with Experiments  
*Environmental Engineering*

**YANXIA LIN**

Development and Optimization of an Algae  
Attached-Growth Bioreactor for Nutrients  
Removal and Biomass Production  
*Environmental Engineering*

**BO LIU**

Towards Visible Light Communication  
Using Mobile Devices  
*Electrical Engineering*

**SIQI LIU**

Nanostructure and Ion Transport Properties  
of Polymeric Hybrid Electrolytes  
*Chemical Engineering*

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Bimetal Treatment of Insensitive Munition  
2,4-Dinitroanisole (DNAN) and Nitroguanidine  
(NQ): A Study of Kinetics, Mass Balance,  
Reaction Pathways and Mechanisms  
*Environmental Engineering*

**JOHN MARTIN, JR.**

Reinforcement Learning Algorithms for  
Representing and Managing Uncertainty  
in Robotics  
*Mechanical Engineering*

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Exploiting Pervasive Commodity WiFi Devices  
for Continuous Spatial Awareness and Security  
*Computer Engineering*

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Design, Behavior Modeling, and Fracture  
Characterization of Strain Locking Materials  
*Mechanical Engineering*

**ZHONGJING REN**

Design, Fabrication and Control  
of Reconfigurable Active Microstructures  
for Solar Sails  
*Mechanical Engineering*

**JEFFREY SLEPOI**

Theory and Numerics for Some Types  
of Fractional Differential Equations  
*Pure & Applied Mathematics*

**XIN SU**

Monitoring and Modeling Groundwater  
in Urban Coastal Areas for the Prediction  
of Nuisance Flooding  
*Civil Engineering*

CHARLES V. SCHAEFER, JR. SCHOOL OF ENGINEERING AND SCIENCE



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Understanding Interface Cohesion/Adhesion  
Mechanism and Hermetic Sealing of an  
Advanced PEM Fuel Cell Architecture  
*Materials Science & Engineering*

**YANGYANG TAO**

Tail-Latency Optimization in Coding-Based  
Distributed Storage and Computing  
*Computer Engineering*

**FEIYUE TENG**

Surface Patterning of Functional Microgels and  
Their Application to Molecular Diagnostics  
*Materials Science & Engineering*

**LICHEN WANG**

Creation of Physiologically Relevant Bone Grafts  
*Biomedical Engineering*

**WEIWEI WANG**

Multifunctional Microsphere-Enabled  
Formation of 3D Tissue Models  
*Biomedical Engineering*

**YIFAN WANG**

Physical Vulnerability of Individuals to  
Coastal Flood Hazards in Urban Areas  
*Ocean Engineering*

**YANG WEI**

Mechanistic Investigation of Heme  
Carbene Transfer Reactions  
*Chemistry*

**YING ZHANG**

Analytical Approaches in Electrohydrodynamics  
with Nonlinear Effects  
*Pure & Applied Mathematics*

**YUFENG ZHANG**

Design and Control of a Cable-Driven  
Ankle-Foot Orthosis for Gait Rehabilitation  
*Mechanical Engineering*

**CHENHUI ZHAO**

Studies on Design and Applications of  
Acoustic Black Holes  
*Mechanical Engineering*

**ZHAOYU ZHENG**

Gas-Phase Ion Chemistry Investigations by  
Ion Mobility and Mass Spectrometry  
*Chemistry*

SCHOOL OF SYSTEMS AND ENTERPRISES



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**ROSS DAVID ARNOLD**

Systems Thinking: Definition, Skills,  
Simulation, and Assessment  
*Systems Engineering*

**BRIAN CHELL**

Multidisciplinary System and Mission  
Design Optimization  
*Systems Engineering*

**FERNANDA DE OLIVEIRA CAPELA**

On the Development of Digital Media Based  
Natural Language Processing Frameworks  
as an Analytical Tool for Data-Driven  
Community Understanding  
*Engineering Management*

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Impact of Energy on a Measurement of Resilience  
in the Management of Tipping Points for  
Complex Natural and Engineered Systems  
*Systems Engineering*

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Data-Driven Operations Management for  
Multichannel Customer Support Services  
*Engineering Management*

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Strategic Decision Making in the Automobile  
Industry Industrializing the Future:  
What to Produce, Where to Produce It,  
and How to Innovate  
*Systems Engineering*

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PINTO CARDOSO**

Understanding Interoperability in the  
Co-Design of Cyber-physical Systems:  
A Causal Graph-based Method  
*Systems Engineering*

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An Exploration of Optimization Models for  
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Service Discovery and Mobile Crowdsourcing  
Recruitment in Social Internet of Things  
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Efficient Infrastructure Planning Frameworks  
For Intelligent Transportation Systems  
*Systems Engineering*

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The STEM Career Pipeline: Optimizing  
STEM Outreach Through the Identification of Key  
Development Stages from Past  
Success Indicators  
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Optimizing Automated Vehicles' Energy and  
Environmental Impacts by a Collective Energy-  
Optimal Adaptive Cruise Control Based on  
Deep-Learning and Car-Following Models  
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A Generic Data Driven Recommendation Systems  
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SCHOOL OF BUSINESS



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Essays in Real Options and Commodity Finance  
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Optimal Investment Problems in  
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Three Essays on Carbon Energy Finance and  
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Investment Decisions with Inverse and  
Deep Reinforcement Learning and  
Hawkes Jump Process  
*Financial Engineering*





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## FACULTY AWARDS

### **Master of Engineering (*Honoris Causa*)**

Souran Manoochehri, Professor and Chair,  
Department of Mechanical Engineering,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Award for Research Excellence**

Brendan Englot, Associate Professor,  
Department of Mechanical Engineering,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Early Career Award for Research Excellence**

Antonia Zaferiou, Assistant Professor,  
Department of Biomedical Engineering,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Jess H. Davis Memorial Award for Research Excellence**

Hongjun Wang, Professor and Chair,  
Department of Biomedical Engineering,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Henry Morton Distinguished Teaching Professor Award**

Leslie Brunell, Teaching Professor,  
Department of Civil, Environmental and Ocean Engineering,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Alexander Crombie Humphreys Distinguished Teaching Associate Professor Award**

Patricia Muisener, Teaching Associate Professor,  
Department of Chemistry and Chemical Biology,  
Charles V. Schaefer, Jr. School of Engineering and Science

### **Harvey N. Davis Distinguished Teaching Assistant Professor Award**

Ying Wu, Assistant Professor,  
School of Business

### **Award for Excellence in Online Teaching**

Lindsey Cormack, Assistant Professor,  
College of Arts and Letters

### **Award for Distinguished University Service**

Dibyendu "Dibs" Sarkar, Professor,  
Department of Civil, Environmental and Ocean Engineering  
Charles V. Schaefer, Jr. School of Engineering and Science

## ACADEMIC REGALIA

The academic gown and hood dates back to the early 14th century in England. In 1895, representatives of American colleges and universities met at Columbia University and prepared a code regulating the design and wearing of academic dress in this country. The code was revised in 1932 and again in 1960.

Each member in the procession wears the hood designating the college last attended and degree last received. The hood is worn over the shoulders and is lined with the official color or colors of the college attended. The color on the edging of the hood, a strip of velvet or velveteen about two inches wide, indicates the major field of study.

The popular trimming colors for Stevens hoods include:

Engineering, orange  
Science, golden yellow  
Humanities, white  
Business, drab  
Medicine, green  
Economics, copper  
Social Science, citron  
Environmental Science, antique gold  
Philosophy, dark blue  
Music, pink  
Law, purple  
Fine Arts, brown

## ALMA MATER

Where flows the Hudson River out to the mighty sea  
On Castle Point so proudly stands there in majesty  
Stevens, our Alma Mater, homage to Thee we pay  
With loyal hearts and voices true to the Red and Gray.





**STEVENS**  
INSTITUTE *of* TECHNOLOGY  
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