FACULTY PUBLICATIONS AND GRANTS

2018 - 2020

School of Engineering and Applied Sciences

The School of Engineering and Applied Sciences offers nationally competitive and fully accredited professional programs at the bachelors, masters, and doctoral degree levels.

UNIVERSITY OF THE DISTRICT OF COLUMBIA
1851

4200 Connecticut Avenue NW
Washington, D.C. 20008

RESEARCH INITIATIVES AND CAPABILITIES

Research capabilities include Cyber Security, Cloud Computing Information Assurance, High Performance Computing, Wireless and Sensor Networks, Computational Intelligence, Computational Geometry, Robotics & Autonomous Systems, Mechatronics, Energy Conversion, Modeling and Simulation, Advanced Manufacturing, Product Design, Nanotechnology, Thermal Science, Optical Engineering, Renewable Energy, Rehabilitation Engineering and Bio-assisted devices, Structural Engineering, Intelligent Transportation System, Water Resources Engineering, and Construction Engineering. The School has The Center for Biomedical and Rehabilitation Engineering that focuses on studying human mobility and The SEAS Research Center.

BACHELOR OF SCIENCE

Biomedical Engineering (BSBME)

Civil Engineering (BSCE)

Computer Science (BSCS)

Electrical Engineering (BSEE)

Information Technology (BSIT)

Mechanical Engineering (BSME)

MASTER OF SCIENCE

Civil Engineering (MSCE)

Computer Science (MSCS)

Electrical Engineering (MSEE)

Mechanical Engineering (MSME)

DOCTOR OF PHILOSOPHY

Computer Science & Engineering (PhD)

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A NOTE FROM THE DEAN

It is with great pleasure that I introduce this report on the scholarly, creative, and professional work of our faculty. In addition to excellent teaching, the School of Engineering and Applied Sciences (SEAS) at the University of the District of Columbia believes that scholarship and involvement in grantsmanship are important to sustain excellence in engineering and computer science education and research.

The scholarly activities at SEAS are strongly focused on engagement and the student experience. Several students have been awarded prestigious internships, including research at NASA, NIST, the Naval Research Laboratory, the Air Force Research Laboratory, the Goddard National Laboratory, Apple, Intel, Boston Scientific, Boeing, and more.

UDC is a vibrant place, with faculty collaborating on interdisciplinary grant proposals, numerous research projects mentored by SEAS faculty, and student teams working on real-world projects. Our students have achieved excellence in national competitions, including NASA's 2019 Revolutionary Aerospace Systems Concepts – Academic Linkage (RASC-AL) Moon to Mars Ice and Prospecting Challenge, NASA Human Exploration Rover Challenge, and Advancing Minorities' Interest in Engineering (AMIE) Design Challenge.

These activities have contributed to SEAS achieving national recognition.

Dr. Devdas Shetty
School of Engineering and Applied Sciences

ACTIVE GRANTS

School of Engineering and Applied Sciences

2019-2020

FUNDING AGENCIES

DACL	Department of Aging and Community Living
DOD	Department of Defense
DOE	Department of Energy
DOE-NNSA	Department of Energy-National Nuclear Security Administration
NASA	National Aeronautics and Space Administration
NIA	National Institute of Aerospace.
NIH	National Institutes of Health
NIST	National Institute of Standards and Technology
NSF	National Science Foundation
ONR	Office of Naval Research
USDA	US Department of Agriculture
USGS	US Geological Survey
WRRI	D.C. Water Resources Research Institute

ACTIVE GRANTS
School of Engineering and Applied Sciences

2019-2020

Title of Grant	Amount	Funding Agency	Duration
NSF CREST Center for Nanoscale Research and Education **Principal Investigator:** • Pawan Tyagi **Co-Principal Investigators:** • Jiajun Xu • Kate Klein • Hongmei Dang • Devdas Shetty	$5.0M	NSF	2019 - 2024
Targeted Infusion Proposal: Course Development for a 21st Century Smart Grid Workforce **Principal Investigator:** • Sasan Haghani **Co-Principal Investigators:** • Wagdy Mahmoud • Pawan Tyagi	$398,345	NSF	2014 - 2020
Scholarships and Mentoring to Increase the Academic Success of Students in Science, Technology, Engineering, and Mathematics **Co-Principal Investigator:** • Segun Adebayo (retired)	$989,475	NSF	2/01/2019 - 1/31/2024
Runoff Control Performance Evaluation and Development of Design Guideline for Green Roof Systems for UDC **Principal Investigator:** • Pradeep Behera	$15,980		1/03/2018 - 2/29/2019
Firebird Ice Rectifier and Extractor (FIRE) **Principal Investigator:** • Sasan Haghani	$10,000	NIA	1/2019 - 7/2019
Implementation of the 2019 NASA Mars Human Exploration Rover: Human Exploration Rover: An Experiential Learning Project for STEM Students at UDC **Principal Investigator:** • Sasan Haghani **Co-Principal Investigator:** • Jiajun Xu	$59,981	NASA	11/2018 - 8/2019

Title of Grant	Amount	Funding Agency	Duration
Implementation of the University of the District of Columbia Human Exploration Rover **Principal Investigator:** • Sasan Haghani **Co-Principal Investigator:** • Jiajun Xu	$79,926	NASA	11/2017 - 08/2019
Professional Research Experience Program at UDC (NIST) **Principal Investigator:** • Kate Klein **Co-Collaborators:** • Devdas Shetty • Pradeep Behera • Jiajun Xu • Pawan Tyagi • Lara Thompson • Hongmei Dang • Esther Ososanya • Sasan Haghani • Amir Shaharinia • Briana Wellman • Wagdy Mahmoud • Lei Wang	$6,761,811	NIST	10/1/2018 - 6/30/2023
PKAL Capital Region Network Workshop at UDC **Principal Investigator:** • Lily Liang	$49,947		8/1/2015 - 7/31/2019
Development of Urban Sustainability Model for Metropolitan DC based on Population, Food, Water, Energy and Infrastructure **Principal Investigator:** • Lei Wang **Co-Principal Investigators:** • Pradeep Behera • Bryan Higgs	$9,974	United States Geological Survey (USGS)	6/15/2018 - 2019
Risk Assessment of Levees in the Face of Flood Hazards in the District of Columbia **Principal Investigator:** • Lei Wang **Co-Principal Investigators:** • Pradeep Behera	$9,966	United States Geological Survey (USGS)	6/15/2019 - 2020

Title of Grant	Amount	Funding Agency	Duration
Integrating Risk and Resilience into Undergraduate Engineering Education Towards a Hazard-Resilient Built Environment **Principal Investigator:** • Lei Wang **Co-Principal Investigators:** • Pradeep Behera • Jiajun Xu • Sasan Haghani	$399,931	NSF	7/15/2018 - 2021
Targeted Infusion Project: STEM-Business Focused Logistics and International Trade (LIT) Analytics **Principal Investigator:** • Anshu Arora (SBPA) **Co-Principal Investigators:** • Lei Wang • Pradeep Behera • Amit Arora • Mohamad Sepehri	$399,967	NSF	6/15/2019 - 2021
NSF: Experimental and Multiscale Simulation Study of Nanoscale Thermal Transport and Evaporation/Boiling Heat Transfer using Self-assembled Nano-emulsions. **Principal Investigator:** • Jiajun Xu	$299,934	NSF	2016 - 2020
Investigating a new Generation of Assistive, Innovative Technologies (GAIT) for balance rehabilitation. Historically Black Colleges and Universities Undergraduate Program (HBCU-UP) **Principal Investigator:** • Lara Thompson	$299,996	NSF	3/2017 - 2020
Development of A New and Optimal Geothermal System for Urban Agriculture Sustainability and Food Security in the District of Columbia **Principal Investigator:** • Lei Wang **Co-Principal Investigators:** • Jiajun Xu • Tolessa Deksissa	$90,000	USDA	2019 - 2022

Title of Grant	Amount	Funding Agency	Duration
Predictive Models for Wind-Penetrated Power Systems Using Bayesian Approach **Principal Investigator:** • Amir Shahirinia	$275,420	NSF	2019 - 2022
Robust Management of Earthen Levee Stability in the Face of Uncertainty for Resilient Geotechnical Infrastructures **Principal Investigator:** • Lei Wang	$300,000	NSF	2019 - 2022
Acquisition of Advanced Robotics and Autonomous Vehicle Technology (ARAVT) for Research in Smart Grid Systems, Teaching & K-12 Outreach at UDC **Principal Investigator:** • Amir Shahirinia **Co-Principal Investigators:** • Esther Ososanya • Wagdy Mahmoud • Jiajun Xu	$391,796	DoD	2019 - 2022
ASA Center for Advanced Manufacturing in Space Technology & Applied Research (CAM-STAR) **Principal Investigator:** • Jiajun Xu **Co-Principal Investigators:** • Pawan Tyagi • Kate Klein • Devdas Shetty • Lei Wang • Sasan Haghani **Senior Personnel** • Pradeep Behera	$3,000,000	NASA	2019 - 2022
DOD Airforce: Nano-enhanced Phase Change Material and Loop Heap Pipe Enabled Hybrid Thermal Management of Electromechanical Actuator **Principal Investigator:** • Jiajun Xu	$200,000	DoD	2020 - 2022
Facilitating Aging individuals' Living and Learning preventative fall Strategies (FALLS) **Principal Investigator:** • Lara Thompson	$1,500,000	DACL	2019 - 2022

Title of Grant	Amount	Funding Agency	Duration
DOD-ONR grant: "Understanding the Processing-Microstructure-Property of Additively Manufactured Parts, Multi-scale Modeling and Experimental Characterization **Principal Investigator:** • Jiajun Xu **Co-Principal Investigators:** • Kate Klein • Nian Zhang	$660,000	DoD	2020 - 2023
Development of Streamflow Prediction Model and Software Package for Anacostia River at Non-Gauged Locations based on Bayesian Approach **Principal Investigator:** • Amir Shahirinia **Co-Principal Investigators:** • Zeinab Farahmandfar • Pradeep Behera	$29,965	DCWRRI	2019 - 2020
Resilience-Based Water Infrastructure Rehabilitation Planning in the District of Columbia **Principal Investigator:** • Zeinab Farahmandfar **Co-Principal Investigators:** • Amir Shahirinia • Pradeep Behera	$29,965	DCWRRI	2019 - 2020
NSF HBCU-UP Targeted Infusion Project: Workforce Development for a New Generation of Cyber Security Systems **Principal Investigator:** • Thabet Kacem **Co-Principal Investigators:** • Anteneh Girma • Sasan Haghani • Lei Wang	$399,868	NSF	2020 - 2023

Title of Grant	Amount	Funding Agency	Duration
Additive Manufacturing Post Processing Partnerships (AMP3) Consortium of four universities and three industries. (UDC lead) **Principal Investigator:** • Pawan Tyagi **Co-Principal Investigators:** • Jiajun Xu • Kate Klein • Esther Ososanya • Devdas Shetty **External Partners:** • Grant Warner • Hyung Bae • Gbadebo Owolabi • Michael Spencer • Donna Stalling	$2,800,000 consortium UDC $1.5M	Department of Energy-National Nuclear Security Administration (DOE-NNSA)	2019 - 2022
NSF-MRI Acquisition of Physical property Measurement System **Principal Investigator:** • Pawan Tyagi **Co-Principal Investigators:** • Jiajun Xu • Kate Klein • Hongmei Dang	$199,210	NSF	2019 - 2020
Additive Manufacturing Post Processing Partnership (DOE) **Principal Investigator:** • Pawan Tyagi **Co-Principal Investigators:** • Jiajun Xu • Kate Klein • Devdas Shetty	$108,000	DOE	12/1/2018 - 9/30/2020
Work Force Development for the Next Generation and Beyond, NSF (TIP) **Principal Investigator:** • Wagdy Mahmoud **Co-Principal Investigators:** • Nian Zhang • Amir Shahirinia **Senior Personnel** • Devdas Shetty	$374,126	NSF	7/2020 - 6/2023

Title of Grant	Amount	Funding Agency	Duration
An Intelligent Optimization, Clustering and Classification Framework for Large Scale Photo-Thermal Infrared Imaging Spectroscopy (PT-IRIS) **Principal Investigator:** • Nian Zhang **Co-Principal Investigators:** • Lara Thompson • Senior Personnel • Devdas Shetty	$551,889	DoD	9/2018 - 9/2021
An Intelligent Optimization, Clustering and Classification Framework for High Dimensional, Overlapped Classes, and Imbalanced Data **Principal Investigator:** • Nian Zhang	$239,997	NSF	7/2015 - 9/2020
Development of a Real-Time Low Flow Forecast System Based on Machine Learning Methods **Principal Investigator:** • Nian Zhang	$10,000	WRRI	3/2020 - 12/2021
EAGER: Nurturing Women's Innovativeness and Strength in Engineering through experiential learning in biomedical engineering (WISE) **Principal Investigator:** • Lara Thompson **Co-Principal Investigators:** • Nian Zhang	$99,997	NSF	3/2017 - 2/2021
Targeted Infusion Project: Integration, Cultivation, and Exposure to Biomedical Engineering at UDC. (HBCU-UP) **Principal Investigator:** • Lara Thompson **Co-Principal Investigators:** • Nian Zhang • Sasan Haghani	$399, 991	NSF	7/2015 - 6/2020
Performance Data-Driven Methods and Tools for: Computer Network Defense through Network Science **Principal Investigator:** • Paul Cotae	$594,755	ONR	8/21/2015 - 8/21/2019

Title of Grant	Amount	Funding Agency	Duration
MRI: Acquisition of Dual Beam FIB/SEM to Enable New Capability for Research, Education and Training at UDC **Principal Investigator:** • Lei Wang **Co-Principal Investigators:** • Hossain Azam • Kate Klein • Jiajun Xu • Hongmei Dang	$511,700	NSF	2020 - 2021
RAPID: Collaborative Research: VAPOC: Visualization, Analysis and Prediction of COVID-19 **Principal Investigator:** • Timothy Oladunni **Co-Principal Investigators:** • Esther Ososanya • Max Denis	$99,999	NSF	2020 - 2021
NIA MSTEM: Advancing Diversity in Aging Research through Undergraduate Education at the University of the District of Columbia **Principal Investigator:** • Lara Thompson **Key Personnel:** • Max Denis • Nian Zhang	$2M	NIH	2020 - 2025

FACULTY PUBLICATIONS 2018 – 2020

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

UZMA AMIR

1. Tyagi, P.; Riso, C.; **Amir, U.;** Rojas-Dotti, C.; Martínez-Lillo, J., Exploring room-temperature transport of single-molecule magnet-based molecular spintronics devices using the magnetic tunnel junction as a device platform. RSC Advances 2020, 10 (22), 13006-13015

LI CHEN

1. L. Chen et al, Handbook of Mathematical Data Science, Springer, Contacted, to appear.
2. L. Chen, Contraction of 3D manifolds and the Jordan Separation Property, 2019 Lehigh University Geometry/Topology Conference, June 20-22. (https://www.lehigh.edu/~dlj0/geotop-19-abstracts.pdf)

ANTENEH GIRMA

1. **Girma, Anteneh** and Diallo Alpha, "Internet of Things (IoT) Security threats and its Challenge on Cloud Computing: "Case Study on: Mitigating Cyber-threats Against Drones and its Susceptible Interconnected Devices.", ITNG 2020 Proceedings- Online Book of Abstracts (Page 6-10), 17th International Conference on Information Technology-New Generations, April 2020.
2. **Girma, A**. and Wang Ping, "Online Phishing and Solutions", Encyclopedia of Criminal Activities and the Deep Web, Chapter 56, IDG GLOBAL Publisher of Timely Knowledge, 2020.
3. **Girma A.**, "Analysis of Security Vulnerability and Analytics of Internet of Things (IOT) Platform". In: Latifi S. (Eds) Information Technology - New Generations. Advances in Intelligent Systems and Computing, Vol 738. Springer, PP 101-104, April 2018
4. **Girma A.,** Wang P., (2018) An Efficient Hybrid Model for Detecting Distributed Denial of Service (DDoS) Attacks in Cloud Computing Using Multivariate Correlation and Data Mining Clustering Techniques, IACIS Journal, Issues in Information Systems, Volume 19, Issue 2, pp. 1-12, 2018
5. Alhabib A., Wang P. **Girma, A.,** Evaluating Existing Solutions for SYN Flood DDoS Attacks, IACIS 58th International Conference, Clearwater Beach, Florida, Page 20-21, October 2018.

DONG HYUN JEONG

1. Ji, S., Jeong, B. & **Jeong, D.H.** Evaluating visualization approaches to detect abnormal activities in network traffic data. Int. J. Inf. Secur. (2020). https://doi.org/10.1007/s10207-020-00504-9
2. Ji, Soo-Yeon, Bong Keun Jeong and **Dong Hyun Jeong**. An Analysis of Human Emotions by Utilizing Wavelet Features, International Journal of Multimedia Data Engineering and Management (IJMDEM), 10.4 (2019): 46-63. Web. 8 Mar. 2020. doi:10.4018/IJMDEM.2019100103

3. SY Ji, **DH Jeong**, M Hassan, IK Ilev, Signature Infrared Bacteria Spectra Analyzed by an Advanced Integrative Computational Approach Developed for Identifying Bacteria Similarity, IEEE Journal of Selected Topics in Quantum Electronics 25 (1), 1-8, Jan 2019, doi: 10.1109/JSTQE.2018.2846034.

LILY LIANG

1. Juan F. Ramirez Rochac, **Lily R. Liang**, Nian Zhang and Timothy Oladunni, A Gaussian Data Augmentation Technique on Highly Dimensional, Limited Labeled Data for Multiclass Classification using Deep Learning, to appear in Proc. of the Tenth International Conference on Intelligent Control and Information Processing (ICICIP 2019), Marrakesh, Morocco, December 14-19, 2019.
2. **Lily Liang**, Jeffrey Enamorado, Yanxia Jia, Briana Wellman, “Integrating Fashion into Robotics for Broadening Participation,” Poster Presentation at the annual conference of Consortium for Computing Sciences in Colleges Eastern Region (CCSC Eastern), October 25-26, 2019, Robert Morris University in Moon Township, Pennsylvania. The abstract is included in The Journal of Computing Sciences in Colleges, Vol. 34, No. 3.
3. **Lily Liang**, Jeffrey Enamorado, Yanxia Jia, "Robotics with Fashion for Broadening Participation in Computing," Poster Presentation at "Branches of the Same Tree: A National Convening on the Integration of Arts, Humanities, and STEMM in Higher Education," National Academy of Sciences, Washington, D.C., April 12th, 2019.
4. **Lily R. Liang**, “Motivating Students with Classroom Honor Roll,” 2018 ASEE Mid-Atlantic Spring Conference, Washington, D.C., April 6, 2018

TIMOTHY OLADUNNI

1. Ehsan, M., Shahirinia, A., Zhang, N., **Oladunni, T.,** "Wind Speed Prediction and Visualization Using Long Short-Term Memory Networks (LSTM)", 10th IEEE International Conference on Information Science and Technology ICIST 2020
2. Ramirez Rochac ; Zhang, N ; Xiong, J ; Zhong, J ; **Oladunni, T.,** "Data Augmentation for Mixed Spectral Signatures Coupled with Convolutional Neural Networks", 9th IEEE International Conference on Information Science and Technology ICIST 2019
3. Tiwang, R., **Oladunni, T.,** "A Deep Learning Model for Source Code Generation, IEEE SoutheastCon 2019
4. Ramirez Rochac, J., Liang, L., Zhang, N., **Oladunni, T.,** "A Gaussian Data Augmentation Technique on Highly Dimensional, Limited Labeled Data for Multiclass Classification using Deep Learning", 10th IEEE International Conference on Intelligent Control and Information Processing ICICIP 2019
5. **Oladunni, T.,** Sharma, S., "Homomorphic Encryption and Data Security in the Cloud", 28th International Conference on Software Engineering and Data Engineering 2019
6. Ramirez Rochac, J., Liang, L., Zhang, N., Thomson, L., **Oladunni, T** "A Data Augmentation-assisted Deep Learning Model for High Dimensional and Highly Imbalanced Hyperspectral Imaging Data" 9th IEEE International Conference on Information Science and Technology, Hulunbuir, China ICIST 2019

BRIANA WELLMAN

1. Lily Liang, Jeffrey Enamorado, Yanxia Jia, **Briana Wellman**, “Integrating Fashion into Robotics for Broadening Participation,” Poster Presentation at the annual conference of Consortium for Computing Sciences in Colleges Eastern Region (CCSC Eastern), October 25-26, 2019, Robert Morris University in Moon Township, Pennsylvania. The abstract is included in The Journal of Computing Sciences in Colleges, Vol. 34, No. 3.

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3. Roberts, M., Apker, T., Johnson, B. Auslander, B., **Wellman, B.,** Aha,D, "Coordinating Robot Teams for Disaster Relief", Proceedings of the FLAIRS 28 Conference , (May 2015).

DEPARTMENT OF CIVIL ENGINEERING

HOSSAIN AZAM

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2. Coll, D; Horai, E; Real, M. I.; Castro, S; Dunn, F.; Gunawan, G.; **Azam, H** & Wilson, J (2019) Chemical dissolution of oilfield strontium sulfate (SrSO4) scale by chelating agents, Applied Geochemistry, 106 (2019), 134-141
3. **Azam, H**; Alam, S T; Hasan, M; Stéphane, D. D.; Kannan, A; Rahman, A and Kwon, M (2019) Phosphorous in the Environment: Characteristics with Distribution and Effects, Removal Mechanisms, Treatment Technologies, and Factors Affecting Recovery as Minerals in Natural and Engineered Systems, Environ. Sci. Pollut. Res. Int. 2019 Jul;26(20):20183-20207. doi: 10.1007/s11356-019-04732-y. Epub 2019, May 22.
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PRADEEP BEHERA

1. **Pradeep K Behera**, "Can Senior Capstone Project Course provide Real-world Work Experience?", Third North American International Conference on Industrial Engineering and Operations Management Conference, Washington DC, September 27-29, 2018.
2. **Pradeep K Behera**, "Transformation of Civil Engineering Senior Capstone Project Course at UDC", Mid-Atlantic ASEE Conference, Washington DC, April 6-08, 2018.
3. Wang, L., **Behera, P. K.,** Haghani, S., Xu, J. (2019). Design of "Risk and Resilience" Focused Courses for Undergraduate Engineering Education Towards a Hazard-Resilient Built Environment, 2019 ASEE Annual Conference & Exposition, June 2019, Tampa, Florida.

BRYAN HIGGS

1. **B. Higgs** and R. Guandique, "Mapping Household Travel Footprints based on Psychological and Physiological Needs", Lockheed Fellowship, 2018
2. C. Ramos-Pizarro, N. Ottey, and **B. Higgs**, "The Use of Simulation & Feedback in the Training Auditory-Perceptual Skills", American Speech-Language-Hearing Association Convention, 2018
3. C. Ramos-Pizarro, N. Ottey, and **B. Higgs**, "Can Simulations Help in the Training of Perceptual Judgements of Voice?", National Black Association for Speech-Language and Hearing 40th Annual Convention, 2018

LEI WANG

1. Gong. W., Tang, H., Juang, C.H., **Wang, L.** (2020). Optimization Design of Stabilizing Piles Considering Spatial Variability. Acta Geotechnica (in press)Wang, L., Powers, M., Studiner, M., Fallatah, M., and Gong, W. (2018).
2. Zhang, B., Wang, H., **Wang, L.,** Mei, G., Shi, L., Xu, N., Li, J. (2020). Large-scale field test on abandoned deep anhydrite mine-out for reuse as crude oil storage–A case study. Engineering Geology, 105477.
3. Barati F., **Wang, L.** (2020). Safety Assessment of Earthen Levees in the Face of Multiple Hazards, 2020 Emerging Researchers National Conference in STEM, Washington, DC.
4. **Wang, L.,** Tait, S., Shin, J., Khoshnevisan, S., Gong, W. (2019). Reliability of Geosynthetic Reinforced Soil Structure Design with Probabilistic and Finite Element Methods, Proceedings of 7th International Symposium on Geotechnical Safety and Risk (ISGSR 2019), pp. 417-422.
5. **Wang, L.,** Behera, P. K., Haghani, S., Xu, J. (2019). Design of "Risk and Resilience" Focused Courses for UG Eng. Education Towards a Hazard-Resilient Built Environment, Proceedings of 2019 ASEE Annual Conference & Exposition, Paper ID 27144
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7. Khoshnevisan, S., **Wang, L.,** Wang, W., and Juang, C. H. (2019). Influence of Gaps in Capping Clay Layer on Liquefaction. Proceedings of the Geo-Congress 2019, ASCE Geotechnical Special Publication 308, pp. 473-478.
8. Zhang, B., Wang, H., **Wang, L.,** and Xu, N. (2019). Stability analysis of a group of underground anhydrite caverns used for crude oil storage considering rock tensile properties. Bulletin of Engineering Geology and the Environment, 1-17.
9. Le, T., **Wang, L.,** and Haghani, S. (2019). Design and Implementation of a DASH7-Based Wireless Sensor Network for Green Infrastructure. In World Environmental and Water Resources Congress 2019, pp. 118-129
10. **Wang, L.,** Powers, M., Studiner, M., Fallatah, M., and Gong, W. (2018). Geotechnical Stability Analysis of Earthen Levees in the Face of Uncertainty. ASCE Geotechnical Special Publication 297, pp. 247-256.

AHMET ZEYTINCI

1. T. Olasumboye, G. M. Owolabi, A. G. Odeshi, **A. Zeytinci**, N. Yilmaz, "Dynamic Behavior of AA2519-T8 Aluminum Alloy under High Strain Rate Loading in Compression," Journal of Dynamic Behavior of Materials, pp. 1-11, 2018.
2. A. Olasumboye, G. Owolabi, A. Odeshi, **A. Zeytinci**, N. Yilmaz, "Dynamic Response and Microstructure Evolution of AA2219-T4 and AA2219-T6 Aluminum Allows," Journal of Dynamic Behavior of Materials, pp. 1-17, 2018.
3. 3- G. M. Owolabi, T. Daramola, N. Yilmaz, H. A. Whitworth, **A. Zeytinci**, "Mechanical Properties of Ultrafine Grain 2519 Aluminum Alloy," TMS, pp. 943-950, 2018.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

PAUL COTAE

1. **Paul Cotae**, Myong Kang and Alexander Velazquez "A Cybersecurity Model for Decision-Making Problems Under Uncertainty Using Game Theory" Accepted to IEEE COMM 2020
2. **Paul Cotae**: "Monte Carlo Methods for Game Theory and Reinforcement Learning" June 2019 Center for High Assurance Computer Systems Code 5540, Naval Research Laboratory, Washington DC, 20375.
3. **Paul Cotae**, Myong Kang "Multi-Agent Reinforcement Learning and Imperfect Information Games, August 2019 Center for High Assurance Computer Systems Code 5540, Naval Research Laboratory, Washington DC, 20375.
4. **Paul Cotae,** "An Integrated Model for Cyber Warfare" December 2019 Center for High Assurance Computer Systems Code 5540, Naval Research Laboratory, Washington DC, 20375.
5. **Paul Cotae,** Mahmoud Elsayed "On the Performance and Modulation Techniques of Underwater Acoustic Sensors Network". Transaction on Techniques in STEM Education, Vol. 3, pp. 11-20, ISSN: 2381-649X January -September, 2018.

HONGMEI DANG

1. **Hongmei Dang**, Jonathan Prado Valdivia Jinfessa Robera Oluchi Onwuvuche Travis Lodge, Esther Ososanya Lei Wang, "*Modeling Efficiency Loss in Sb2Se3 Solar Cells"*, 47the IEEE Photovoltaic Specialists (PVSC) Conference, Accepted, 2020

SASAN HAGHANI

1. Li Zhu, **Sasan Haghani**, and Laleh Najafizadeh "On fractality of functional near-infrared spectroscopy signals: analysis and applications," Neurophotonics 7(2), 025001 (29 April 2020). https://doi.org/10.1117/1.NPh.7.2.025001
2. A. Rahimi, J. Zhou and **S. Haghani**, "A VR Gun Controller with Recoil Adjustability", Proc. IEEE International Conference on Consumer Electronics, Las Vegas, NV, Jan. 4-6, 2020, pp. 1-2..
3. L. Wang, P. Behera, **S. Haghani** and J. Xu, "Work in Progress: Design of "Risk and Resilience" Focused Courses for Undergraduate Engineering Education Towards a Hazard-Resilient Built Environment," Proc. of Annual ASEE Conference, Tampa, Florida, June 15-19 2019, pp. 1-15, Paper ID #27144.
4. **S. Haghani** and L. Najafizadeh "Industrial Wireless Sensor Networks with Applications in Production and Safety", Proc. of Iranian Steel Symposium, Kish, Iran, Feb. 2019, pp. 1-8.
5. A. Rahimi, A. Ajmal, H. Patel and **S. Haghani**, "The Design and Implementation of a VR Gun Controller with Haptic Feedback", Proc. IEEE International Conference on Consumer Electronics, Las Vegas, NV, Jan. 2019, pp. 1-2.
6. **S. Haghani**, "Development of a New Course on Microgrids and Distributed Energy Resources", in Proc. International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, Nov. 2018 pp. 1-5, Paper ID # IMECE2018-88506. (Received Best Paper Award in Power Systems Category)

WAGDY MAHMOUD

1. **Wagdy H. Mahmoud** and Nian Zhang," Disruptive Technologies: An Educational Perspective," 2018 ASEE Mid-Atlantic Spring Conference, April 6-7, 2018

ESTHER OSOSANYA

1. Hongmei Dang, **Esther Ososanya**, and Nian Zhang. "Efficiency Loss Mechanism of Earth-Abundant FeS2Solar Cells". Thin Solid Films, 2019.

2. **Esther Ososanya** and Harish Panth, “Impactful Curriculum Reform in Engineering Education” The North American International Conference on Industrial Engineering and Operations, 2019, Presenter, Global Engineering Education.
3. Hongmei Dang, **Esther Ososanya**, and Nian Zhang. “Design and Modeling and Simulation of Horizontal Silicon Nanowire Dual-gate FET Biosensors for Sensitive and Multiplexed Detection of Cancer Markers”, ASEE conference, 2019.

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