JONGSEONG BRAD CHOI, Ph.D.

Assistant Professor
Department of Mechanical Engineering
The State University of New York, SUNY Korea
The State University of New York, Stony Brook University
119 Songdo Moonhwa-Ro, Yeonsu-Gu, Incheon, 21985, South Korea

jongseong.choi@stonybrook.edu
+82 32 626 1811
meic-lab.com

RESEARCH INTERESTS

Visual Analytics; Structural Health Monitoring; Prognostics and Health Management; Computer Vision; Deep Learning; Photogrammetry; Aerial Manipulation; Hypersonic Propulsion; Compressible Flow

EDUCATION

PhD., Mechanical Engineering, Purdue University, West Lafayette, IN, USA ……………………………….................... *05/2020*
- Dissertation: *Automating Visual Data Collection and Analytics toward Lifecycle Management of Engineering Systems*

MSc., Mechanical Engineering, University of Mississippi, University, MS, USA ……………………………………. *05/2014*
- Thesis: *Parametric Scramjet Analysis*

BSc., Mechanical Engineering, University of Mississippi, University, MS, USA ……………………………………. *05/2012*

EMPLOYMENT HISTORY

Assistant Professor, Department of Mechanical Engineering …………………………………………………….. *08/2020 – Present*
The State University of New York, SUNY Korea, Incheon, South Korea

Research Assistant Professor, Department of Mechanical Engineering …………………………………………….. *08/2020 – Present*
The State University of New York, Stony Brook University, Stony Brook, USA

Graduate Research Assistant, School of Mechanical Engineering …………………………………………….. *08/2014 – 05/2020*
Purdue University, West Lafayette, IN, USA

Graduate Research and Teaching Assistant, Department of Mechanical Engineering ……………………. *08/2012 – 05/2014*
Unversity of Mississippi, University, MS, USA

PROFESSIONAL POSITION

Committee, Board of Finance …………………………………………………………………………………………….. *01/2022 – Present*
The Korean Society of Mechanical Engineers (KSME) – Division of Reliability Engineering, South Korea

Committee, Board of Education ……………………………………………………………………………………………. *01/2021 – Present*
The Korean Society of Prognostics and Health Management (KSPHM), South Korea

Short Course Committee …………………………………………………………………………………………………….. *01/2021 – 09/2021*
International Conference on Prognostics and Health Management Asia-Pacific 2021

RESEARCH PROJECTS

19. **(PI) Remote Inspection for Shipment Engine Reliability exploiting Metaverse and Digital Twin Models**, supported Korea Register, awarded funding of 44 million KRW (equivalent to 36.7k USD)
05/2023 – 12/2023 (ongoing)

18. **(PI) 2023 Steam Activity Research Program for Incheon Academy of Science & Arts (IASA)**, supported by IASA, awarded funding of 16 million KRW (equivalent to 13.3k USD).
03/2023 – 12/2023 (ongoing)

17. **(PI) 2022 Global Product Service Localization Research**, supported by **ITP** (Incheon Technopark), awarded funding of 5 million KRW (equivalent to 4.2k USD).
09/2022 – 12/2022

16. **(PI) Emulation and Enhancement of Human Capability on Infrastructure Assessment: Engineering Soft-Power Engaged Monitoring and 3 Major Techniques** supported by **NRF** (National Science Foundation of Korea) under Grant No. NRF-2022R1F1A106361711, awarded funding amount of 101.43 million KRW (equivalent to 84.5k USD).
06/2022 – 02/2024 (ongoing)

15. **(PI) Development of An Integrated MCU (Mechanical Control Units) Component and Module Corresponding to Smart-Car Complex Control System** supported by **ITP (Incheon Technopark)**, awarded funding of 28 million KRW (equivalent to 23.3k USD).
05/2022 – 12/2022

14. **(PI) Space Exploration and In-Situ Resource Utilization Center (SRC)** supported by **NRF** (National Research Foundation of Korea) under Grant No. NRF-2022M1A3C2085237, awarded funding of 475 million KRW (equivalent to 395.8k USD).
04/2022 – 12/2026 (ongoing)

13. **(PI) Development of IMU-based self-stabilizing autonomous guided vehicle (AGV) control system and hardware** supported by **AIDL co.**, awarded funding of 5.7 million KRW (equivalent to 4.8k USD).
03/2022 – 07/2022

12. **(PI) 2021 Global Product Service Localization Research**, supported by **ITP** (Incheon Technopark), awarded funding of 10 million KRW (equivalent to 8.3k USD).
10/2021– 12/2021

11 **(PI, Equipment Grant) Two Electric Rover Vehicles, Velodyne LiDar Puck, and RTKGPS Sensor**, supported by **KICT** (Korea Institute of Civil Engineering and Building Technology), awarded funding equivalent to 53 million KRW (equivalent to 44.2k USD).
06/2021 – 06/2025 (ongoing)

10. **(Co- PI) XR based Intuitive Inventory System for Smart Factory,** supported by **RAPA** (Korea Radio Promotion Association), awarded funding of 200 million KRW (equivalent to 167k USD)**,** 3 conference paper published **[C6],[C7],[C8]**.
04/2021 – 12/2021

9. **(PI) Automating Visual Assessment of Infrastructure exploiting Computer Vision and Big Visual Data**, supported by **NRF** (National Science Foundation of Korea) under Grant No. NRF-2021R1G1A1012298, awarded funding of 30 million KRW (equivalent to 25k USD)**,** 1 journal paper published **[J10], [A1]**.
03/2021 – 03/2022

6. **Integrating Human and Machine for Post-Disaster Visual Data Analytics**, supported by **NSF** under Grant No. NSF-1835473, 2 journal paper published **[J7], [J9]**; 1 journal paper accepted **[J10]**; 1 conference paper accepted **[C9]**; 1 proposal submitted **[P5]**.
01/2019 – 05/2020

8. **STORM: Safeguarding Cultural Heritage through Organisational Resources Management**, collaborated with **EU** (European Union) under Grant No. H2020 n. 700191, 1 conference paper published **[C4]**; 1 journal paper under review **[J13]**.
04/2017 – 05/2020

7. **RETH: Resilience ExtraTerrestrial Habitat**, supported by New Horizon Program at **Purdue University** and **NASA** (The National Aeronautics and Space Administration), 3D models & videos were published in numerous articles worldwide (e.g., usatoday.com, space.com,
08/2018 – 01/2019

etc.); Available in https://phys.org/news/2019-07-humans-lava-tubes-moon.html, 1 conference paper published **[C5]**.

6.	**Active Citizen Engagement to Enable Lifecycle Management of Infrastructure Systems**, supported by **NSF** under Grant No. NSF-1645047, 2 journal paper published **[J6], [J8]**.	*05/2017 – 08/2018*
5.	**Vision-based Visual Inspection System for A Large Number of Aerial Images**, 1 journal paper published **[J6]**; 1 proposal funded **[P5]**	*01/2017 – 12/2017*
4.	**Sensor Integrated Autonomous Flight UAV System Development**, 2 proposal generated **[P1]**, **[P2]**	05/2016 – 05/2021
3.	**Automated Region-of-Interest Localization and Classification for Facility Visual Assessment**, 1 journal paper published **[J5]**; 1 conference paper published **[C2]**.	*05/2015 – 05/2017*
2.	**Image-Based Collection and Measurements for Construction Pay Items**, supported by **INDOT** (Indiana Department of Transportation) under Grant No. SPR-4006, 1 journal paper published **[J4]**; 1 conference paper published **[C1]**; 1 technical Report published **[C3]**.	*05/2015 – 08/2017*
1.	**Parametric Analysis of Scramjet Engine Varying Material and Fuel (Research Assistant)**, supported graduate program by University of Mississippi, 3 journal papers published **[J1]**, **[J2]**, **[J3]**; 1 Master thesis generated	*08/2012 – 05/2014*

TEACHING RECORDS

Course Teaching

MEC 510 (Graduate Course): Object-Oriented Programming for Scientists and Engineers – *Visual Analytics for Mechanical Engineers* at *the State University of New York, SUNY Korea*	*Sp22, 23*
MEC 410: Design of Machine Elements at *the State University of New York, SUNY Korea*	*Sp22, 23*
MEC 301: Thermodynamics at *the State University of New York, SUNY Korea*: Recorded the highest course evaluation score in the department	*Fa20, 21, 22*
MEC 320: Numerical Methods in Engineering Design and Analysis at *the State University of New York, SUNY Korea*	*Fa21, 22*
MEC 363: Mechanics of Materials at *the State University of New York, SUNY Korea*	*Sp21*

Student Advising

Supervisor, Ph.D. Students, *the State University of New York, SUNY Korea*

• **Jonathan Boyack**: Smart and resilience city application exploiting visual data and computer vision techniques	*2020.08 – Present*

Supervisor, Master's Students, *the State University of New York, SUNY Korea*

• **Ricardo Ortiz**: RTKGPS-based autonomous driving	*2021.08 – Present*
• **Jee Won Lee**: Camera modules and controls development for long-distance assessment	*2022.03 – Present*
• **Alfredo Valenzuela**: Lidar sensing and SLAM, and app development	*2022.08 – Present*
• **Pureun Jeong**: Lidar-based autonomous driving	*2022.12 – Present*
• **Hansol Lim**: 3-DOF robot arm control	*2023.02 – Present*
• **Hanbeom Chang**: Camera modules and controls development	*2023.02 – Present*
• **Pureun Jeong**: Visual Analytics using 360 degree cameras	*2023.02 – Present*

Dissertation Committee Chair, **Ph.D. Student,** *the State University of New York, SUNY Korea*

- **Mark Anthony Rotor**: Designing tidal turbine (HATT) blades utilizing Artificial Neural Network (ANN) where I serve as chair of the committee

2021.01– Present

Theis Committee Member, **Master Student,** *the State University of New York, SUNY Korea*

- **Suyeon Lee**: Prognostics using Nonlinear Cumulative Damage Model for Electronic Devices where I serve as member of the committee

Supervisor, **Undergaduate Students**, *the State University of New York, SUNY Korea*

- **Hye Jee Chang**: Visual Analytics (Fa 2020, Sp2021), Georgia Tech undergrad program
- **Pureun Jeong**: Visual Analytics (Fa2021, Sp 2022), SUNY Korea master's program
- **Sooyon Chang**: SLAM for visual assessment (Fa2020, Sp 2021, Fa2021), Cornell Univ. master's program
- **Hyunseung Cha**: Motor driver development for EV (Fa2020, Sp 2021, Fa2021), Republic of Korea army
- **Hansol Lim**: EV system for visual assessment (Fa2020, Sp2021), SUNY Korea master's program
- **Prince-David Malendele**: SLAM for visual assessment (Fa2020, Sp2021), Stony Brook Univ. master's program
- **Jimin Shin**: Lidar sensing and rover control (Sp2022, Fa2022), SUNY Korea master's program
- **Seunghyun Cha**: Lidar sensing and rover control (Sp2022, Fa2022), undecided
- **Dannielle Macmaster**: Aerospace metabus platform development (Sp2023), currently under my supervision
- **Leeloy Makusha**: Aerospace metabus platform development (Sp2023), currently under my supervision

Research Mentor, **Undergraduate Research Course**, *Purdue University*

- **Wookjin Chung**: 6 credits of undergraduate research (Sp2018, Fal2019)
- **Jonghyun Park**: 6 credits of undergraduate research (Sp2018, Fa2019)
- **Gun Wook Park**: 6 credits of undergraduate research (Sp2017, Fa2017)
- **Sharda Parth**: 3 credits of undergraduate research (Sp2018)
- **Yisong Yin**: 6 credits of undergraduate research (Fa2016, Sp2017)

Curriculum Development and Educational Service

High School Credit System and Curriculum

2016 – 2017

- Chosen and served as an instructor for the 16-hour course " Computer Vision and Sustainable Cities Applications" organized by Incheon Metropolitan City Office of Education

TRAILS: Teachers and Researchers Advancing Integrated Lessons in STEM, *Purdue University*

2016 – 2017

- Supported by NSF under Grant No. NSF-1513248
- Participated as a graduate research assistant in promoting practices that increase students' motivations and capacities to pursue careers in STEM area.

SLED: Science Learning through Engineering Design, *Purdue University*

2015- 2016

- Supported by NSF under Grant No. NSF-0962840
- Participated as a graduate research assistant in collaboration between STEM disciplinary faculty and grades 3-6 teachers.

SYNERGISTIC LEADERSHIP POISITION

Organizing Committee

03/2023

Korean Society of Prognostics and Health Management (KSPHM) 2023, Seoul, South Korea

- Served as a finance division chair

Session Chair

11/2022

Korean Society of Mechanical Engineers (KSME) Annual Meeting 2022, Jeju, South Korea

- Served as a chair of the session "Poster Session for Reliability"

Seminar Organizer
10/2022

Human-Machine Collaboration through MR & VR, SUNY Korea, Incheon, South Korea

- Hosted Prof. Chul Min Yeum, University of Waterloo, to hold an open seminar to SUNY Korea community

Lecture Series Co-Organizer
Twice every year

Annual PHM Lecture Series for Industry, Yonsei University, Seoul, South Korea

- Assisted organizing 3-days lecture series and was in charge of generating and online publishing high-quality video disseminating PHM workflow

Session Chair
07/2022

Korean Society of Prognostics and Health Management (KSPHM) 2022, Seoul, South Korea

- Served as a chair of the session "Future Mobility and Battery"

Colloquium Organizer
06/2022

Two Departments Collaborating Seminar (Biomedical Engineering at Purdue Univ. and Mechanical Engineering at SUNY Korea), SUNY Korea, Incheon, South Korea

- Hosted 6 prestigious scholars for this colloquium (3 from Purdue and 3 from SUNY Korea) to share ideas with SUNY Korea students and searching future collaboration between two institutions

Session Chair
09/2021

Asia Pacific Conference of the Prognostics and Health Management Society 2021 (PHMAP 2021), Jeju, South Korea

- Organize short course; serve as a chair of the session "Machine Learning Methods for PHM"

Session Chair
09/2021

Korean Society of Prognostics and Health Management (KSPHM) 2021, Jeju, South Korea

- Serve as a chair of the session "Application of PHM"

Workshop Director
04/2019

4th Midwest Smart Structure Colloquium at *Purdue University*, West Lafayette, IN, USA

- Organize, design, and direct a 3-days colloquium with 50 participants which is held in Bowen Laboratroy at Purdue University

HONORS & AWARDS

Awards

Best Paper Award from *Korean Society of Mechanical Engineering (KSME) Annual Meeting 2022, KSME*
11/2022

- The paper entitled "A Real-Time Log Data Analytics-based Electric Vehicle Path Optimization", authored by Jonathan Boyack and Jongseong Choi* won the best paper award. Only 2 papers were selected for this award among all papers submitted to the Reliability Division in KSME.

Best Presentation Award from *Korean Society of Mechanical Engineering (KSME) Annual Meeting 2022, KSME*
11/2022

- The poster entitled "Indoor Navigation System Designed for a Safety of Construction Site", authored by Pureun Jeong, Jimin Shin, Seung Hyun Cha, Jongseong Choi* won

the best paper award. Only 2 papers were selected for this award among all papers submitted to the Reliability Division in KSME.

Travel Award & Workshop Invitation from *NHERI RAPID Experimental Facility, NSF*   *07/2019*
- This award selects 20 attendees who has professional research background for the RAPID 4 days Equipment Training Workshop at the University of Washington, Seattle, as well as support up to $1,500 Travel Fund.

Travel Award for Conference from College of Engineering, *Purdue University*   *05/2018*

Honorable Mentions from 3rd Midwest Smart Structure Colloquium, *University of Illinois (UIUC)*   *10/2017*
- This award recognizes excellence PhD candidates supporting up to $1,000 for 2019 EWSHM conference at Hilton Hotel, Manchester, UK

Resident Assistant Scholarship from University of Mississippi   *08/2012 – 08/2013*

Honor Program Scholarship from University of Mississippi   *01/2011*
- This scholarship is awarded to prominent undergraduate students in the School of Engineering.

PROFESSIONAL TALKS & PRESENTATION

[T16] Invited Speaker, "A Real-Time Log Data Analytics-based Electric Vehicle Path Optimization", Argonne National Lab., IL, USA	*05/2023*
[T15] Invited Guest Lecturer, "Human-Machine Collaborative Remote Monitoring and Sensing", Korean Register, Busan, South Korea	*12/2022*
[T14] Invited Guest Lecturer, "Human-Machine Collaborative Remote Monitoring and Sensing", ME Seminar Series, Hanyang University, Seoul, South Korea	*11/2022*
[T13] Invited Guest Lecturer, "Computer Vision engaged Infrastructure Remote Sensing", Dept. Architecture Engineering Seminar Series, Inha University, Incheon, South Korea	*11/2022*
[T12] Invited Speaker, "Citizen Engaged Infrastructure Assessment and Remote Sensing", Young Promising Scientists Session (유망과학자 세션), Korean Society of Mechanical Engineers (KSME) Annual Conference 2022, Jeju, South Korea	*11/2022*
[T11] Invited Guest Lecturer, "Cultural Heritage Long-term Preservation and Monitoring". National Museum of Modern and Contemporary Art, Cheongju, South Korea	*09/2022*
[T10] Invited Guest Lecturer, "Citizen Engaged Infrastructure Assessment and Remote Monitoring", Artificial Intelligence Winter School, The Korean Society for Mechanical Engineers (KSME) – AI-Machine Research Group, KAIST, Daejeon, South Korea	*02/2022*
[T9] Research Seminar, "AI to Enable Water Quality Control", Magpiesoft co., Daejeon, South Korea	*02/2022*
[T8] Research Seminar, "AI for Possible Military Applications", HANCOM Intelligence co., Seongnam, South Korea	*11/2022*
[T7] Research Seminar, "Citizen Engaged Building Cultural Heritage Management", Incheon City Hall, Incheon, South Korea	*11/2021*
[T6] Invited Speaker, "Automating Visual Data Analytics to Aid Lifecycle Management of Infrastructure toward Sustainable Cities", Conference on Toward 'Ontact' Industries through PHM (PHM Korea 2021), Korea Society for Prognostics and Health Monitoring (KSPHM), Jeju, South Korea	*09/2021*
[T5] Research Seminar, "Infrastructure Management with Automated Vision Systems", Incheon City Museum, Incheon, South Korea	*10/2021*

[T4]	**Research Seminar**, "Vision-based visual inspection for large-scale infrastructure", Korea Institute of Construction Technology (KICT), Ilsan, South Korea	*09/2020*
[T3]	**Research Seminar**, Midwest Smart Structure Colloquium (MSSC), Midwest area US	*10/16, 10/17, 4/19*
[T2]	**Research Seminar**, 9th European Workshop on SHM, Manchester, UK, July	*08/2018*
[T1]	**Poster Session**, Herrick board meeting, West Lafayette, IN, USA	*11/2015, 11/2016, 11/2018*

PATENTS

[A1]	**Jongseong Choi*** (2021.11), Computer Vision Technique to Extract Structural Information from Citizen Science Data: Automated Lifecycle Infrastructure Monitoring Application. Korean Patent No. 10-2021-1068454	*11/2021*

BOOK CHAPTER

[B1]	Changwoon Han and **Jongseong Choi** (2022.10). Chapter 10: Information of PHM research and facilities, *PHM BOK Guide: Prognostics and Health Management Body of Knowledge* (pp. 307-345). Hongreung Publishing. ISBN: 979-11-5600-966-5

PEER-REVIEWED JOURNAL PAPERS (15 published, 1 accepted); *corresponding author

[J16] Benjamin E. Wogen, **Jongseong Choi***, Xin Zhang, Xiaoyu Liu, Lissette Iturburu, and Shirly J. Dyke (2023), Automated Bridge Inspection Image Localization and Retrieval based on GPS-Refined Similarity Learning, *ASCE Journal of Structural Engineering (accepted)*

[J15] Xiao-Le Han; Toshiro Hata, **Jongseong Choi**, Yan-Jun Du, Yi-Jie Wang, & Ning-Jun Jiang* (2023), Deep Learning Based Approach for Automated Characterization of Large Marine Microplastic Particles, *Marine Environmental Research*, 183, 105829

[J14] Xiaoyu Liu, Shirley J. Dyke*, Ali Lenjani, Ilias Bilionis, Xin Zhang, & **Jongseong Choi** (2023), Automated Image Localization to Support Rapid Building Reconnaissance in a Large-scale Area, *Computer-Aided Civil and Infrastructure Engineering*, 38(1), 3-25. **(IF: 11.775, JCR top 0.72%)**

[J13] Ju An Park, Xiaoyu Liu, Chul Min Yeum*, Shirley J. Dyke, Max Midwinter, Chungwook Sim**, Jongseong Choi**, Zhiwei Chu, Thomas Hacker, & Bedrich Benes (2022), Multioutput Image Classification to Support Post-Earthquake Reconnaissance, *Journal of Performance of Constructed Facilities*, 36(6), 04022063, **(Editor's Choice Selection)**

[J12] Xiao-Le Han, Ning-Jun Jiang*, Yu-Fei Yang, **Jongseong Choi**, Devandra N. Singh, Yan-Jun Du, & Yi-Jie Wang (2022), Deep Learning Approach for the Detection and Instance Segmentation of Clayey Soil Desiccation Crack, *Computers and Geotechnics*, 146, 104733.

[J11] **Jongseong Choi***, Lazaros Toumanidis, Chul Min Yeum, Patrikakis Charalampos, Ali Lenjani, Xiaoyu Liu, Panagiotis Kasnesis, Ricardo Ortiz, Nin-Jun Jiang, & Shirley J. Dyke (2022), Automated Graffiti Detection: Automated Graffiti Detection: A Novel Approach for Maintaining Historical Architectures in Community, *Applied Sciences*, 12(6), 2983

[J10] **Jongseong Choi***, Ju An Park, Shirley J. Dyke, Chul Min Yeum, Xiaoyu Liu, Ali Lenjani, & Ilias Bilionis (2022), Similarity Learning to Enable Buliding Searches in Post-event Image Data, *Computer-Aided Civil and Infrastructure Engineering,* 37(2), 261-275, **(IF: 11.775, JCR top 0.72%)**

[J9] Xiaoyu Liu, Shirley J. Dyke*, Chul Min Yeum, Ilias Bilionis, Ali Lenjani, & **Jongseong Choi** (2020), Automated Indoor Image Localization to Support Post-Event Building Assessment. *Sensors*, 20(6), 1610.

[J8] **Jongseong Choi*** & Shirley J. Dyke (2020), CrowdLIM: Crowdsourcing to Enable Lifecycle Infrastructure Management. *Computers in Industry*, 115, 103185.

[J7] Ali Lenjani*, Shirley J. Dyke, Ilias Bilionis, Chul Min Yeum, Kenzo Kamiya, **Jongseong Choi**, Xiaoyu Liu, & Arindam G. Chowdhury (2020), Towards Fully Automated Post-event Data Collection and Analysis: Pre-event and Post-event Information Fusion. *Engineering Structure,* 109884.

[J6] Chul Min Yeum*, **Jongseong Choi,** & Shirley J. Dyke. (2019), Automated Region-of-interest Localization and Classification for Vision-based Visual Assessment of Civil Infrastructure. *Structural Health Monitoring*, 1475921718765419.

[J5] **Jongseong Choi**, Chul Min Yeum*, Shirley J. Dyke, & Mohammad J. Jahanshahi (2018), Computer-aided Approach for Rapid Post-event Visual Evaluation of a Building Façade. *Sensors*, 18(9), 3017.

[J4] Chul Min Yeum*, **Jongseong Choi**, & Shirley J. Dyke (2017), Autonomous Image Localization for Visual Inspection of Civil Infrastructure. *Smart Materials and Structures*, 26(3), 035051.

[J3] Jeffrey A. Roux*, **Jongseong Choi**, & Neerad Shakya (2014), Parametric Scramjet Cycle Analysis for Nonideal Mass Flow Rate. *Journal of Thermophysics and Heat Transfer*, 28(1), 166-171.

[J2] Jeffrey A. Roux*, Neerad Shakya, & **Jongseong Choi** (2013), Scramjet: Minimum Thrust-specific Fuel Consumption with Material Limit. *Journal of Thermophysics and Heat Transfer*, 27(2), 367-368.

[J1] Jeffrey A. Roux*, Neerad Shakya, & **Jongseong Choi** (2012), Revised Parametric Ideal Scramjet Cycle Analysis. *Journal of Thermophysics and Heat Transfer,* 27(1), 178-183.

CONFERENCE PROCEEDINGS & OTHER ARTICLES (14 published, 1 accepted); *corresponding author

[C15] **Jongseong Choi***, "Automating Visual Analytics to Aid Lifecycle Management of Infrastructure", Structural Congress 2023, New Orleans, LA, May 3 – 6, 2023 *(accepted)*

[C14] Ricardo Ortiz, Jee Won Lee, Jonathan Boyack, & **Jongseong Choi***, "Development of User-Designated-Path Driving Ground Robot for Construction Sites", Korean Society of Mechanical Engineers (KSME) Annual Meeting 2022, Jeju, South Korea, Nov 9 – 12, 2022

[C13] Jee Won Lee, Chul Min Yeum, Ricardo Ortiz, & **Jongseong Choi***, "Automated Pan-Tilt-Zoom Camera Control to Enable Long-Range Visual Assessment and Localization", Korean Society of Mechanical Engineers (KSME) Annual Meeting 2022, Jeju, South Korea, Nov 9 – 12, 2022

[C12] Jonathan Boyack & **Jongseong Choi***, "A Real-Time Log Data Analytics-based Electric Vehicle Path Optimization", Korean Society of Mechanical Engineers (KSME) Annual Meeting 2022, Jeju, South Korea, Nov 9 – 12, 2022

[C11] Jonathan Boyack & **Jongseong Choi***, "Electric Vehicle Path Optimization using Real-Time Log Data for Decision Making", Annual Conference of the PHM Korea Society, Jun 29 – July 1, 2022

[C10] **Jongseong Choi** & Shirley J. Dyke*, "ARIO: Automatic Reconnaissance Image Organizer to Learn from Earthquake", Annual Conference of Korean Society of Mechanical Engineers, Division of Reliability, Jeju, South Korea, Mar 23 – 25, 2022

[C9] Shirley J. Dyke*, Xiaoyu Liu, **Jongseong Choi**, Chul Min Yeum, Juan Park, Ali Lenjani, Julio A. Ramirez, & Randall Poston, "Learning from Earthquakes Using the Automatic Reconnaissance Image Organizer," Proceedings of 17th World Conference on Earthquake Engineering, Sendai, Japan, Sep 27- Oct 2, 2021

[C8] **Jongseong Choi*** & Jonathan Boyack, "Automating Visual Data Analytics to Aid lifecycle Management of Infrastructure toward Sustainable cities", Annual Conference of the PHM Korea Society, Sep 8 – 10, 2021

[C7] **Jongseong Choi***, Ju An Park, Chul Min Yeum, & Shirley J Dyke, "Similarity Learning to Building Search Capability: Post-event Image Data Application", Proceedings of Asia Pacific Conference of the Prognostics and Health Management Society 2021, Jeju, South Korea, Sep 8 – 11, 2021

[C6] Jonathan Boyack & **Jongseong Choi***, "Machine Learning Approach for a Rapid Falling Hazard Assessment on High-Rise Buildings", Proceedings of Asia Pacific Conference of the Prognostics and Health Management Society 2021, Jeju, South Korea, Sep 8 – 11, 2021

[C5] Audai Theinat, Anahita Modiriasari, Antonio Bobet, Jay Melosh, Shirley J. Dyke*, Julio A. Ramirez, **Jongseong Choi**, Amin Maghareh, & Daniel Gomez (2019, March), "Geology Explorations of Lava Tubes in the National Beds Lava Monuments," In Lunar and Planetary Science Conference (Vol. 50).

[C4] <u>**Jongseong Choi***</u>, Chul Min Yeum, Shirley J. Dyke, Mohammad R. Jahanshahi, & Gun Wook Park (2018), "Rapid Vision-Based Inspection of Nonstructural Components in Buildings," Proceedings of the 9th European Workshop on Structural Health Monitoring, Manchester, UK, July 10-13, 2018.

[C3] Chul Min Yeum*, Anup Mohan, Shirley J. Dyke, Mohammad R. Jahanshahi, <u>**Jongseong Choi**</u>, Ziyi Zhao, & Julio A. Ramirez (2017), "Image-Based Collection and Measurements for Construction Pay Items," Purdue University e-publication.

[C2] Chul Min Yeum*, <u>**Jongseong Choi**</u>, & Shirley J. Dyke (2017), "Automated Region-of-Interest Localization and Classification for Visual Assessment on Civil Infrastructure," Proceedings of the 11th International Workshop on Structural Health Monitoring, Stanford, CA, September 12-14, 2017.

[C1] Chul Min Yeum*, <u>**Jongseong Choi**</u>, & Shirley J. Dyke (2017), "Image Localization for Computer-enhanced Visual Inspection of Civil Infrastructure," Proceedings of Engineering Mechanics Institute Conference, San Diago, CA, United States, June 4-7, 2017.

PROPOSAL DEVELOPMENT to U.S. GOVERNMENT (5 generated, 1 awarded).

[P5] **Active Citizen Engagement to Enable Lifecycle Management of Infrastructure Systems**	*07/2016*
• **(Funded** under Grant No. **CMMI-1645047)** Co-authored successful proposal with funded $100,000 from National Science Foundation (NSF).	
[P4] **Automating Damage Quantification, Localization and BIM Updating Using Voluminous Optical Data**	*02/2020*
• Co-authored successful proposal and requested $400,000 to National Science Foundation (NSF).	
[P3] **HDBE (E-Defense): Enabling Building Damage Assessment by Engaging Remote Experts**	*01/2018*
• Co-authored and requrested $700,000 to National Science Foundation (NSF).	
[P3] **S&SA: Autonomous Infrastructure Inspection and Condition-Based Maintenance**	*05/2017*
• Co-authored proposal and requested to National Science Foundation (NSF).	
[P1] **S&SA: Reconfigurable Aerial Robots for Intelligent Assessment to Industrial Disasters**	*11/2016*
• Co-authored proposal and requested to National Science Foundation (NSF).	