Seonghyeon Moon

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EDUCATION

Rutgers University Aug. 2018 - Present

- Ph.D. in Computer Science — New Jersey, United States

  Adviser: Professor Mubbasir Kapadia

  Field of Study: Human Crowd Behavior Modeling

Gwangju Institute of Science and Technology Mar. 2015 - Feb. 2017

- M.S. in Mechanical Engineering — Gwangju, South Korea

  Adviser: Professor Kwanghee Ko

  Thesis: Parameterization of Cylindrical Unorganized Point Clouds for Surface Fitting

  Field of Study: Geometric Modeling and Projection Mapping

Northumbria University Mar. 2009 - Feb. 2015

- B.S. in Manufacturing and Systems Design Engineering — Newcastle, U.K.

  Graduated with First Class Honours

Seoul National Univerisity of Science and Technology Mar. 2009 - Feb. 2015

- B.S. in Industrial and Information Systems Engineering — Seoul, South Korea

  Graduated with highest honor, Rank 1/45

PUBLICATIONS

JOURNAL ARTICLES

[1] Seonghyeon Moon and Kwanghee Ko, "A point projection approach for improving the accuracy of the multilevel B-spline approximation", *Journal of Computational Design and Engineering*. [pdf]

CONFERENCE PAPERS

[2] Jihoon Park, Seonghyeon Moon and Kwanghee Ko, "Dynamic Correction of Image Distortions for a Kinect-Projector System", in *26th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision 2018 (WSCG2018)*, Plzen, Czech Republic, May. 2018. [pdf]

[1] Seonghyeon Moon, Jin-Eon Park and Kwanghee Ko, "Parameterization of unorganized cylindrical point clouds for least squares B-spline surface fitting", in *25th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision 2017 (WSCG2017)*, Plzen, Czech Republic, May. 2017. [pdf]

POSTERS

[2] Jihoon Park, Seonghyeon Moon and Kwanghee Ko, "Automatic Geometry Correction for a Kinect-Projector system in Dynamic Environment", in *Workshop on Virtual Reality Interaction and Physical Simulation (VRIPHYS 2018)*, Delft, Nedtherlands, Apr. 2018.

[1] S.H. Moon, J.H. Park and K.H. Ko, "Adaptive Method for 2.5D Scattered Point Approximation", in *23rd ACM Symposium on Virtual Reality Software and Technology (VRST2017)*, Gothenburg, Sweden, Nov. 2017. [pdf]

HONORS & AWARDS

- Korean Government Scholarship (Tuition waive and Stipend), Gwangju Institute of Science and Technology, 2015, 2016
- Graduated with highest honor in the department of IISE, Seoul National Univerisity of Science and Technology, 2015
- High G.P.A., Seoul National Univerisity of Science and Technology, 2010

RESEARCH EXPERIENCE

Intelligent Visual Interfaces LAB Aug. 2018 - Present
Rutgers University New Jersey, United States
Graduate Assistant (Advisor : Professor Mubbasir Kapadia)

- Participating in Machine learning project
  - -Training a model and generating heatmaps (Crowd density).
  - -Crowd movement contol using reinforcement learning.
- Participated in Autodesk project
  - -Combined the SyDEVS with the SteerSuite.
  - -Visulaized agents path and calculation resuts.

Modeling and Simulation Laboratory Jan. 2018 - May. 2018
Gwangju Institute of Science and Technology Gwangju, South Korea
Research Intern (Advisor : Professor Kwanghee Ko)

- Led project on an IMU human tracking using a smart phone
  - -Identified and checked project progress and set overall direction
  - -Implemented Extended Kalman Filter algorithm for the IMU sensor
  - -Implemented new guide line concept for improving accruacy of the tracking

Modeling and Simulation Laboratory Mar. 2015 - Feb. 2017
Gwangju Institute of Science and Technology Gwangju, South Korea
Research Assistant (Advisor : Professor Kwanghee Ko)

- Led project on projection mapping for a medium object without distortion

  -Identified and checked project progress and set overall direction

  -Implemented projector and Kinect calibration and suggested methods for distortion correction using calibration results

  -Implemented Kinect depth data acquisition and visualization with PCL (Point Cloud Library) and OpenGL
- Participated project on development of 3D scanning application for plant engineering

  -Learned and implemented scattered data approximation using Multilevel B-Spline
- Participated project on projection mapping for free-form surfaces

  -Implemented projector and camera calibration to display the image at the desired position

TEACHING

Numerical Analysis and Visualization Fall, 2016
Gwangju Institute of Science and Technology Gwangju, South Korea
Teaching Assistant

- Taught MATLAB, graded exams and programming assignments for around 40 undergraduates.

Physics Fall, 2012
Seoul National Univerisity of Science and Technology Seoul, South Korea
Course Tutor

- Assisted 3 to 4 weak undergraduate students to improve their understanding of physics

WORK EXPERIENCE

Mandatory Military Service Feb. 2010 – Nov. 2011
ATCIS Technician Hwacheon, South Korea
(Army Tactical Command Information System)

- Maintained every computer in the 7th Division (10-thousand army) approximately five hundred
- Maintained network hardwares (Router, Switch)
- Maintained ATCIS system (Army Tactical Command Information System): data backup, intranet maintenance, intranet installation

TECHNICAL SKILLS

Advanced : C++, OpenGL, MATLAB
Intermediate : C, Python
Beginner : HTML, Java, OpenCV

LANGUAGES

- Korean: Native
- English: Fluent