Moses C. **Nah**

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Education

Massachusetts Institute of Technology (MIT) — *Cambridge, MA, USA*
Ph.D. in Mechanical Engineering (MIT MECHE) — *May.2020 - Present*

Massachusetts Institute of Technology (MIT) — *Cambridge, MA, USA*
M.S. in Mechanical Engineering (MIT MECHE) — *Sep.2018 - May.2020*

Seoul National University — *Seoul, S.Korea*
B.S. in Mechanical Aerospace and Engineering — *Mar.2011 - Sep.2018*
- Summa Cum Laude

Gyeonggibuk Science High School — *Gyeonggi-Do, S.Korea*
Early Graduation with Honors — *Mar.2009 - Mar.2011*

Publications

Manipulating a Whip in 3D via Dynamic Primitives — *IROS*
Moses C. Nah, Aleksei Krotov, Marta Russo, Dagmar Sternad and Neville Hogan — *Prague, Czech Republic, Sep.2021*

Online Impedance Adaptation Facilitates Manipulating a Whip — *IROS*
Xiaofeng Xiong, **Moses C. Nah**, Aleksei Krotov and Dagmar Sternad — *Prague, Czech Republic, Sep.2021*

Dynamic Primitives Facilitate Manipulating a Whip — *BIOROB*
Moses C. Nah, Aleksei Krotov, Marta Russo, Dagmar Sternad and Neville Hogan — *New York, USA, Nov.2020*
- Best Student Paper Award [LINK]

Motion Planning of Autonomous Personal Transporter Using Model Predictive Control for Minimizing Non-Minimum Phase Behavior — *International Conference on Ubiquitous Robots (UR)*
Dongil Choi, Minsu Kim, Hyeongkeun Kim, Choe Jonghun and **Moses C. Nah** — *Honolulu, U.S.A, Jun.2018*

Design Analysis of Tuskbot: Universal Stair Climbing 4-Wheel Indoor Robot — *IROS*
Jonghun Choe, Ukjin Kwon, **Moses C. Nah** and Hyeongkeun Kim (Equal Contributions) — *Vancouver, Canada, Sep.2017*
- 'Tuskbot with Track Mechanism' for Stairs with Large Nose and Stairs without Riser [LINK]
- 'Tuskbot with Length Adjustment Mechanism' for Stairs with Various Height and Depth [LINK]

'Tuskbot': Design of the Mobile Stair Climbing 2 by 2 Wheels Robot Platform with Novel Passive Structure 'Tusk' — *International Conference on Control, Automation and Robotics (ICCAR)*
Jonghun Choe, **Moses C. Nah**, Hyeongkeun Kim and Ukjin Kwon (Equal Contributions) — *Nagoya, Japan, Apr.2017*

Rocker-Bogie with 'Tusk': Design of the Mobile Robot Platform that can Climb Stairs with Tusk and Rocker-Bogie Mechanism — *Korea Robotics Society Annual Conference (KROC)*
Ukjin Kwon, Hyeongkeun Kim, **Moses C. Nah** and Jonghun Choe (Equal Contributions) — *PyoungChang, S.Korea, Feb.2017*

Experience

NAVER LABS Robotics Team — *Gyeonggi-Do, S.Korea*

Undergraduate Internship Program — *Aug.2016 - Feb.2017*

- Advisor: Dr. Sang-ok Seok (Leader of NAVER LABS, MIT MECHE, Meshworm and MIT Cheetah)
- Team Project: "Wheel Based Robot which can Climb Stairs"
- Personal Project: "Li-Ion Battery Pack PCB for Universal Usages of NAVER LABS Robots"
- Developed and Patented a Passive Novel Structure 'Tusk'
- Developed and Published Four Successful Stair Climbing Robots

SNU Biorobotics Lab — *Seoul, S.Korea*

Undergraduate Thesis — *Mar.2017 - Present*

- Advisor: Prof. Kyu-Jin Cho (Professor of Seoul National University)
- Stabilized the Underactuation Mechanism of "SNU Exo-Glove Poly"
- Developed Circuitry for Material Stiffness Identification

Honors & Awards

2020	**Best Student Paper Award**, 2020 BIOROB	*New York, NY, USA*
2020	**First Place Presenter, $500 Award**, 2020 MIT MERE	*Cambridge, MA, USA*
2018	**₩1,500,000 Start-Up Investment**, SNU Start-Up Camp	*Seoul, S.Korea*
2017	**Excellence Award with ₩1,500,000**, SNU Smart Social Contribution Contest	*Seoul, S.Korea*
2017	**Excellent Paper Award with ₩500,000 Prize**, SNU CTL 26th Best Report Contest	*Seoul, S.Korea*
2017	**Young Talent Support Scholarship**, NAVER LABS	*Seoul, S.Korea*
2017	**Gwanak Special Intention Scholarship**, Hanil Corporation	*Seoul, S.Korea*
2013	**Grand Prize Award**, Design, Manufacturing Process and Laboratory Contest	*Seoul, S.Korea*
2011	**First Runner-Up Prize Award**, Creative Engineering and Design Contest	*Seoul, S.Korea*
2009	**International Physics Olympiad Candidate**, Winter and Summer School Completion	*Seoul, S.Korea*
2009	**Gold Medal Prize**, 12th Korea Physics Olympiad High School Session	*Seoul, S.Korea*
2009	**First Place**, Task Assignment Test before High-School Admission	*Seoul, S.Korea*
2008	**Silver Medal Prize**, 11th Korea Physics Olympiad Middle School Session	*Seoul, S.Korea*

Presentations and Invited Talks

Conference Presentations

2021	**ICRA (Virtual)**
2020	**Neural Control of Movement** Blitz Talk
2020	**BIOROB** Best Student Paper Award, [LINK]
2020	**Neuromatch Conference 3.0** [LINK]

Poster Presentations

2022	**MIT De Florez Competition**
2022	**MIT MERE**
2021	**DO-Sim at RSS (Robotics: Science and Systems)**
2021	**Neural Control of Movement**
2020	**MIT MERE** First Place Presenter, $500 Award
2020	**IROS Workshop** Impedance Learning, [LINK 1] [LINK 2]
2019	**MIT MERE**
2019	**MIT Embodied Intelligence Research Mixer**

Invited Talks

2017	**TEDx SNU Salon** Presenter for TED Session: People who make Something

Patents

2017	**KR10-2017-0037517**, Assistive Device for Stair Climbing Robot	*Seoul, S.Korea*

Teaching Experience

Teaching Assistant *Cambridge, MA, USA*

2.151 Advanced System Dynamics & Control

- Overall Rating: 6.8/7.0

Group and Personal Tutor *Seoul, S.Korea*

Courses from SNU Liberal Education

- Tutor of Science and Technology Writing Class - 2017 Autumn, 2018 Spring Semester
- Tutor of Basic Physics Class Students - 2012 Autumn, 2013 Spring Semester
- Tutor of Basic Calculus Class Students - 2012 Spring, 2012 Autumn, 2013 Spring, 2018 Spring Semester

Group Tutor *Seoul, S.Korea*

SNU Social Responsibility (SNUSR)

- Group Tutor of Arduino Class

Extracurricular Activity

Voluntary TA for Quals - Dynamics *Cambridge, MA, USA*

MIT MECHE *2021 - Present*

Seongnam City Bundang Borough Office *Gyeonggi-Do, S.Korea*

Social Service Agent *Jun.2014 - Jun.2016*

- Bureaucratic Book Binder

SNU in Washington D.C *Washington D.C, U.S.A.*

Member *Oct.2013 - Jan.2014*

- 'SNU in Series' Global Visiting Program
- Seoul National University Special Talent Training Program

SNU NGO Dream Consultant *Chungju, S.Korea*

Member *Aug.2013 - Sep.2013*

- Mentor of Chungju High School

Media

MIT News	[LINK]	*Nov.2020*
Yonhap News	[LINK]	*Oct.2017*
Hankyung Economics	[LINK]	*Jun.2017*

Skills

Programming Languages

- C/C++, Python , R, Bash

Markup Languages

- LaTeX, HTML, XML, RMarkdown

Version Control

- GIT

Others

- Matlab, MuJoCo, ROS, Docker, LabVIEW

CADs

- KiCAD, Solidworks

Language

- English, Korean