Minjae Kwon

Curriculum Vitae

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Education

MAR2012-FEB2015	**General Curriculum for Science and Technique**, *Masan-Yongma High School*, Changwon, Republic of Korea.
MAR2015-FEB2019	**Bachelor of Science (B.S.), Physics**, *Pusan National University*, Busan, Republic of Korea.
MAR2019-present	**Master of Science (M.S.), Physics**, *Pusan National University*, Busan, Republic of Korea.

Major Courses

- Quantum Mechanics
- Computational Physics (MATLAB)
- Electronics For Scientists
- Nuclear Physics
- Particle Physics

Interests

Physics

- Exploring QCD phase diagram
- 1st order phase transition between hadronic matter and quark gluon plasma

Experiment

- Silicon Pixel Detector (SPD) and Silicon Photomultiplier (SiPM)
- Detector with ultra-fast data-taking, recovering with high granularity
- PIDable SPD (PID: Paricle Identification)
- SiPPMD (Silicon Pixel Photomultiplied Detector): combining SPD and SiPM with MAPS technology for on-chip analogue data processing

Simulation

- GEANT

Secondary Education

- Simple, cheap, easily hackable particle detector and data-taking device for student

▬▬▬ Experience

Working

MAY2015–DEC2015 **Teaching and advising designing experiments and data-taking technique with Arduino** , *Masan-Yongma High School*, Changwon, Republic of Korea.
Project Name: Development of Device for Microcomputer-Based Laboratories (MBL) with Arduino (Arduino를 활용한 MBL장비 고안)
Supported by Youth Science Class (YSC) funded by the Korea Foundation for the Advanced of Science & Creativity (KOFAC).

DEC2016–FEB2019 **Internship**, *Heavy Ion Experiment Lab. (HIPEx), Department of Physics, Pusan National University*, Busan, Republic of Korea.

MAR2019–present **Researcher : Master Course**, *Heavy Ion Experiment Lab. (HIPEx), Department of Physics, Pusan National University*, Busan, Republic of Korea.

MAR2019–JUN2020 **Teaching Assistant**, *Pusan National University*, Pusan, Republic of Korea.
Teaching Assistant for lecture 'General Physics Laboratory' at Spring Semester, 2019 and Spring Semester, 2020

01JUL2019–24AUG2019 **Summer Student**, *CERN*, Meyrin, Switzerland.
CERN Non-Member State Summer Students 2019

Project

MAY2014–DEC2014 **Data Transfer Technique with Arduino via Visible Light**, *Masan-Yongma High School, Republic of Korea*.
Original Title (Korean): Arduino를 활용한 가시광선대역의 전자기파를 이용한 상호 데이터 교환 기술
Supported by Youth Science Class (YSC) funded by the Korea Foundation for the Advanced of Science & Creativity (KOFAC).

FEB2017–MAY2017 **Circumstance Monitoring System Development**, *HIPEx, Department of Physics, Pusan National University*.
System to monitor temperature and humidity was developed with Raspberry Pi,external sensor, and Google Spreadsheet for data storing. Data can be served without local server, just with google spreadsheet. It has been running smoothly in clean room for about 2 years. (since May 2017)

MAY2017–MAY2019 **Mass Chip Test (MCT) and Hybrid Integrated Circuit Assembly (HIC Assembly)**, *HIPEx, Department of Physics, Pusan National University*, Busan, Republic of Korea.
It includes procedures for Mass Chip Test (MCT) and Outer Barrel Hybrid Integrated Circuit Assembly (OB-HIC Assembly).

JUL2019–AUG2019 **Analysis Of Cosmic Ray Data Taken During The Commissioning Of The New ALICE Inner Tracking System**, *ALICE, CERN*, Meyrin, Switzerland.
Supervised by Magnus Mager and Markus Keil, EP-AID-DT, CERN. The Report is uploaded at CERN CDS : http://cds.cern.ch/record/2687398

Conferences (Oral Presentation, Poster)

26OCT2017 ***Poster)* Temperature and Humidity Monitoring System with Raspberry Pi**, *Contest for Undergraduate at KPS Fall Meeting, Gyeongju, Republic of Korea*.
Original Title (Korean): 라즈베리파이를 이용한 온도 및 습도 모니터링 시스템 구축

11JUN2018	**OB HIC Production - Pusan/Inha**, *11th ALICE ITS upgrade, MFT and O2 Asian Workshop, Hiroshima, Japan.* https://indico.cern.ch/event/687364/contributions/3036053
04NOV2018	**A Report on Korean activities for the ALICE-ITS upgrade**, *The 7th Asian Triangle Heavy-Ion Conference (ATHIC 2018), Hefei, China.* https://indico.ihep.ac.cn/event/8180/session/35/contribution/181

Publication

1. Jongsik Eum, **Minjae Kwon**, Sanghyeon Lee, In-Kwon Yoo, "Feasibility Study on the Total Ionizing Dose Effect of the Alice Pixel Detector(ALPIDE) and the Korea Multi-Purpose Accelerator Complex(KOMAC)", *New Phys.: Sae Mulli*, **vol.69**, 283 (2019) *(Co-Author)*

2. **Minjae Kwon**, *Magnus Mager, Markus Keil*, "Analysis Of Cosmic Ray Data Taken During The Commissioning Of The New ALICE Inner Tracking System)", *CERN Summer Student Programme Report*, CERN CDS : CERN-STUDENTS-Note-2019-128 (2019)

Languages

Korean	Native	*Mother Tongue*
English	Intermediate: B2	*1st Foriegn Language*
Japanese	Elementary: A2	*2nd Foriegn Language*
French	Beginner: A1	*3rd Foriegn Language*

Computer Skills

Bold: Well Skilled

Programming Laguage	**Python**, **C++**, Fortran, Shell Script		
Mathematics Tool	**MATLAB**, **Mathematica**	Physics Package	**ROOT**, GEANT4
Operating System	**Linux**, **MacOS**	Graphical Design	**Photoshop**, **Illustrator**, Indesign
Mechanical Design	AutoCAD	Others	**LaTeX**, MongoDB

Attended Workshop, School

24JUL2017– 28JUL2017	**6th International Geant4 Tutorial in Seoul 2017**, Seoul, Republic of Korea. https://hep.kisti.re.kr/indico/conferenceDisplay.py?confId=234
09JAN2019– 11JAN2019	**Particle Detector School for High Energy Physics (PDS4HEP)**, Jeongsun-gun, Republic of Korea. Original Title (Korean): 2019 고에너지물리 입자검출기 학교 https://indico.sscc.uos.ac.kr/event/3