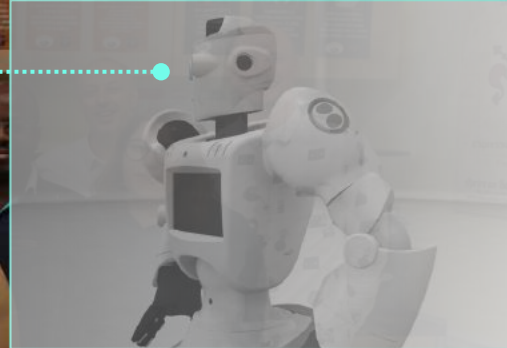Functions ( ) {

# MIKE KIM

musiccube375@gmail.com :: 647.636.6379

35 Mariner Terrace, Toronto, ON, CANADA M5V 3V9

}

## INTRODUCTION

**A** Large-scale System (H/W, S/W) and professional Engineer

**1**8 years of experience developing robot technology products and business models in environments demanding strong organizational, creative, system integration and interpersonal skills.

**V**ery creative, detail-oriented, highly trustworthy, ethical, and discreet. Confident and poised in interactions with individuals at all levels.

**M**aking complicated systems Simple, Efficient and Well-Organized.

## PERSONAL STATEMENT

My experience as a robotics engineer started from MDRobotics company where I worked on CanadaArm2, SPDM and the Hubble telescope rescue project for International Space Station(ISS) after graduating Waterloo University in Canada. Especially I have a strong background of multi-body dynamics, kinematics, path planning, fiducial (marker) recognition and robotics control system.

After worked for MDRobotics, I've expanded my experience to the 3D image registration, re-construction and surgical robotics for knee replacement and spine surgery using RoboDoc, Kuka and Staubli industry robots through the R&D in Lee Hospital and Mirus implant company.

## SKILL SETS

| | | |
|---|---|---|
| Languages | C/C++ (25 Yrs) | C# (1 Yr) |
| | Java(2 Yrs) | Python (2 Yrs) |
| Embedded H/W & S/W | ARM SAM3XE | Arduino |
| | Raspberry Pi | SPI/UART/I2C/CAN |
| Compiler IDE | QT | VS (MFC) C++ |
| | VSCode-G++/GDB | |
| 3D Visualization | OpenGL | VTK/ITK |
| | OpenCV | SOLIDWORKS |
| Data Communication | Socket/Serial-Thread | DICOM |
| Source Code Control | Git/SSH/SCP | |

**Others Proficiencies:** Windows, Mac, Linux, Matlab/Simulink, Fusion 360, Blender

## AREA OF EXPERTISE

- Advanced Robotics
  **H/W system design**: real-time joints control
  **Articulations**: Kinematics/Inverse-Kinematics (6, 7 DOF)
  **Vision system**: 3D image registration, Image processing
  **Medical robot**: Spine, Knee replacement surgery robot
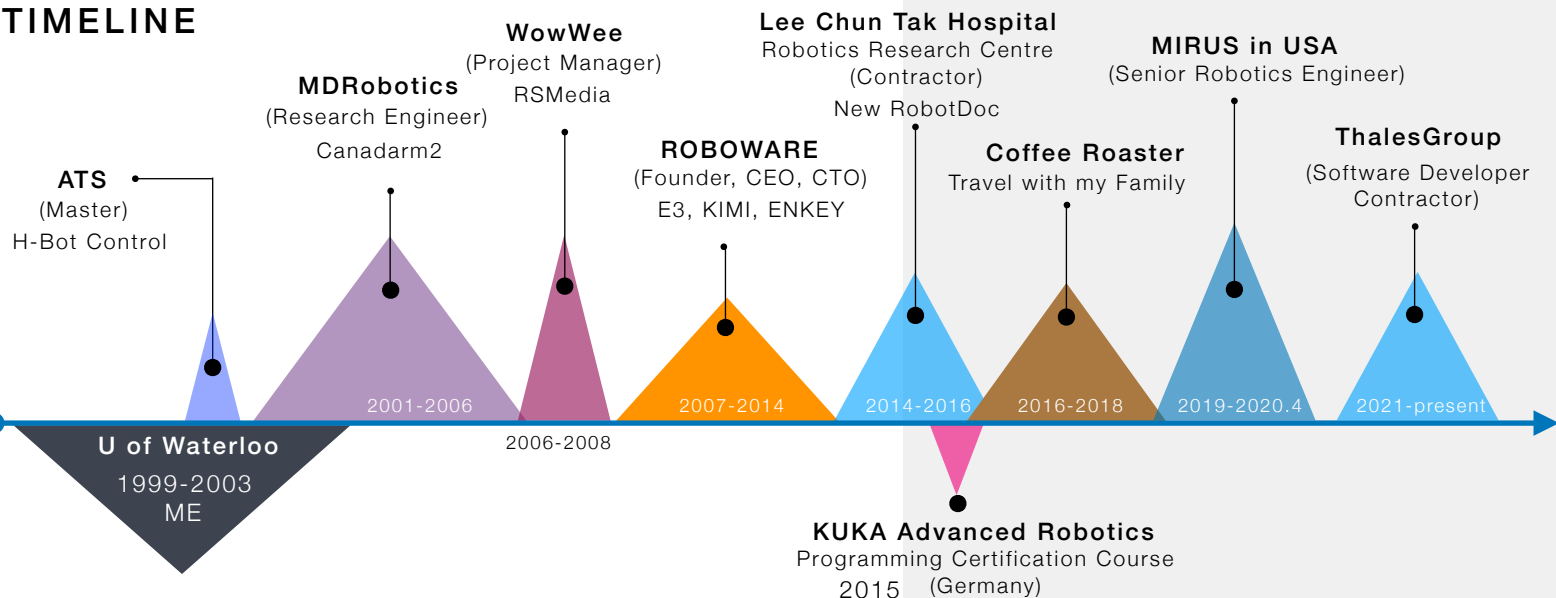  **Robot**: Staubli, Kuka, RoboDoc, Canada-arm(SSRMS SPDM)
- Mathematics
  Advanced Algebra, Optimization, Neural-Network
- System Design
  H/W + Embedded S/W + Application + Production

## TIMELINE

**ATS**
(Master)
H-Bot Control

**MDRobotics**
(Research Engineer)
Canadarm2

**WowWee**
(Project Manager)
RSMedia

**ROBOWARE**
(Founder, CEO, CTO)
E3, KIMI, ENKEY

**Lee Chun Tak Hospital**
Robotics Research Centre
(Contractor)
New RobotDoc

**Coffee Roaster**
Travel with my Family

**MIRUS in USA**
(Senior Robotics Engineer)

**ThalesGroup**
(Software Developer Contractor)

2001-2006

2006-2008

2007-2014

2014-2016

2016-2018

2019-2020.4

2021-present

**U of Waterloo**
1999-2003
ME

**KUKA Advanced Robotics**
Programming Certification Course
(Germany)
2015

# WORK EXPERIENCE

**THALES** - Toronto, Canada
2021-present

*Train Signal System Software & Tool Developer.*
Tools developer for automated testing for London subway transit at Thales

**MIRUS LLT** - Atlanta, USA
Medical Device company
https://mirusmed.com/
2019-2020.4

*Senior Medical Robotics Engineer. Full Stack Stand-alone Application Developer.*
Spine Surgical Robot Software development - FK, IK for Staubli Robot, Generated Path-plan to Robot, Simulator and Staubli Robot Server and Interface. (QT, VTK, Staubli Robot, 3D fiducial Marker Interface)

**Lee Chun Tak Hospital**
                - Seoul
Robotics Research Centre
2014-2016

*Full Stack Stand-alone Application Developer: Contract (Orthoplanner S/W)*
Knee Replacement Software development, allowing physicians predefine the implant position and rotation of the femur and tibia and their simulation before the knee surgical robot performs surgeries.
(VC++ MFC, VTK: Image Segmentation, Joint Kinematics, DICOM Transfer)

**ROBOWARE** - Seoul
Intelligence Robotics
2007-2014

*Founder & CEO/CTO*
As a founder and CEO of ROBOWARE my Goal was to bring affordable personal robots to kids, educational fields and families. At the same period of time I made contribution to medical robot area with my knowledge and experiences.

Key Achievements:
Developed Robot Operating System, Medical robot system, Produced robot platforms

| E3-ROMA | ENGKEY | KIBOT | KIBOT2 | KIMI |
|---|---|---|---|---|
| 2007~2009 | 2010~2013 | 2010~2011 | 2011~2012 | 2012~2013 |

**WowWee** - Hong Kong R&D
Interactive Toy Robotics
2006-2008

*Project Manager*
WowWee Company was the world leading robotic toy company and I was co-leading the couple of projects such as RSMedia and Elvis Presley Robot

Key Achievements:
Managing production lines and developed embedded, motion generation S/W

RS Media                    Elvis Presley Robot

**MDRobotics** - Toronto R&D
Space Robotics
2001-2006

*Researcher Engineer*
MDRobotics' company is the most famous space robot company in the world by providing SRMS, SSRMS and SPDM to NASA which were installed on ISS in space.
Contributed the space robot real-time control system design & Robot arm simulation.

Key Achievements:
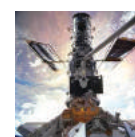Participation in developing Canada Arm (SSRMS, SPDM)
Participation in Hubble Telescope projects in NASA's Goddard Space Flight Centre

SSRMS( Canadarm2)            SPDM            Hubble Telescope

# EDUCATION

**Coffee Roaster**
Florence, Italy
2017

*Became the Coffee Roaster*
   Trained by the professional artisan coffee roaster.

**Coffee Barista**
Istanbul, Turkey
2017

*Obtained the CSA Certification*

**KUKA Advanced Robotics**
Programming Certification Course
- Augsburg, Germany
 2015

*KUKA LBR Platform Application Developer*
   Obtained the certification of KUKA LBR Med
   lightweight robot for a medical product.

**University of WATERLOO**
Graduate School - Waterloo
1999-2003

*Master Degree of Mechanical Engineering*
   Obtained NSERC Full Scholarship and Fellowship
   Developed the DynaSim S/W to simulate the multi-body motion
   Thesis: Multi-body Kinematics & Dynamics Analytical Simulation

# PERSONAL PROJECT

**I-Stacker Robot Platform**
 2020 - present

Integrative retail and food service automation platform

**Roast Coffee Been**
2018

Roasting coffee beans for my family and friends.
  - Produced computerized profile by the customized roast machine integrated
  with sensor

**Education Robot Platform**
2018

Developing the robot H/W & S/W platform for a scenario based education system.

**Home-made 3D Printer**
2018

Built the 3D printer for making the prototype.

**PID - Coffee Machine**
2018

Developed the PID controller and mobile app which can be
integrated into any espresso coffee machine for the precise brewing
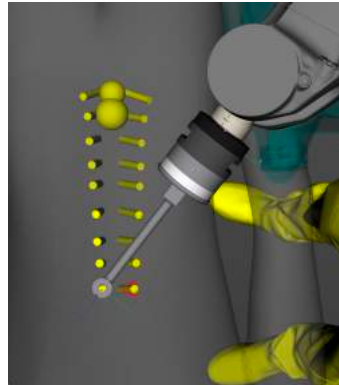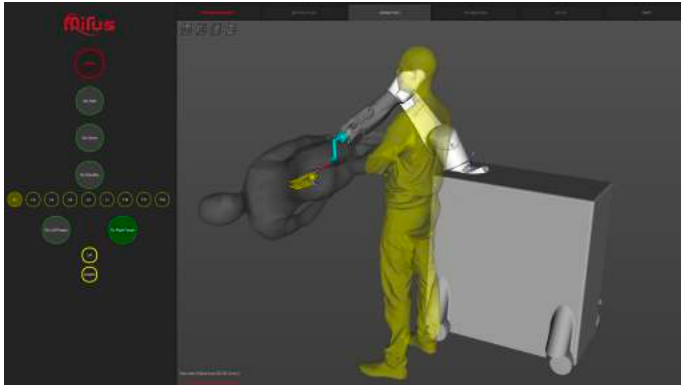temperature and weight control interfacing with mobile device.

**POS System**
2018

Developed POS (Point Of Sale) system for a coffee shop
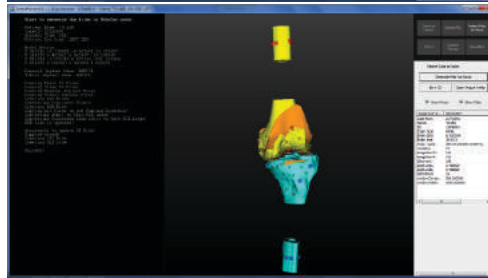   - Mobile Device APP connected in the web server
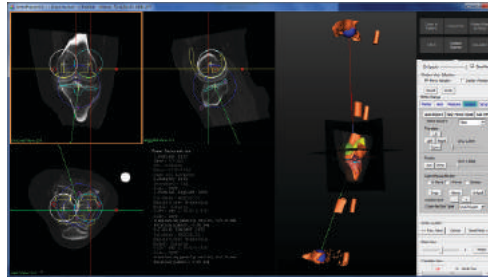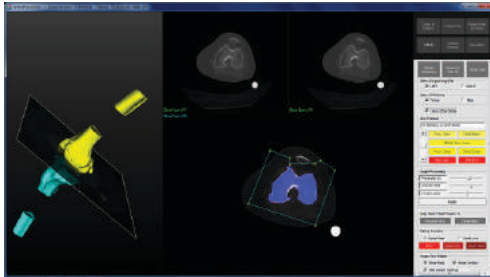
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## MIKE KIM
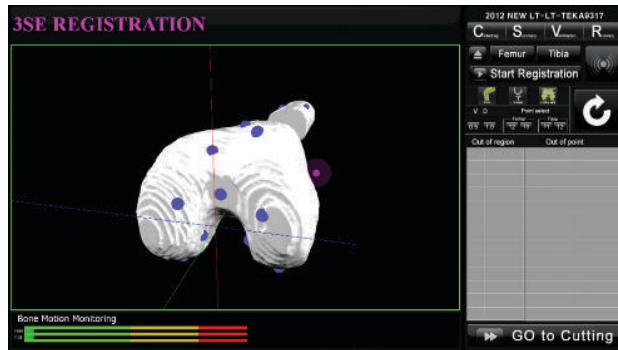musiccube375@gmail.com

}

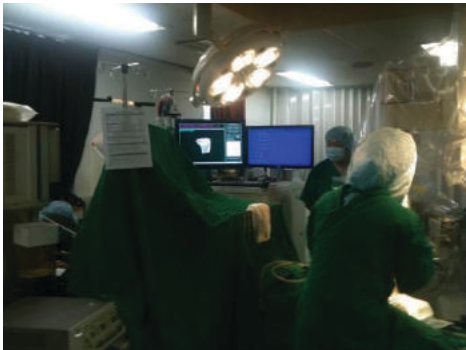# S/W SCREEN SHOT

**MirusRobotPlanner** with Staubli Robot - 2020
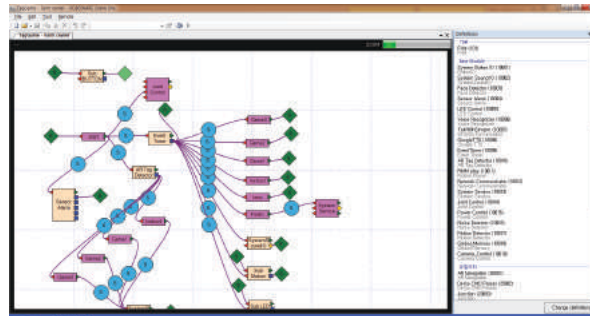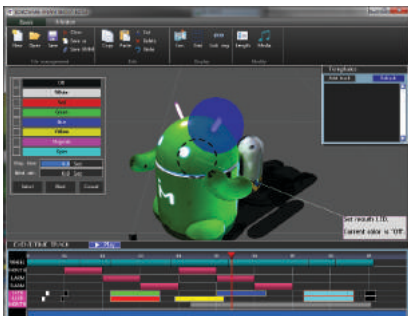


**Orthoplanner** S/W for Knee Replacement Surgery - 2016
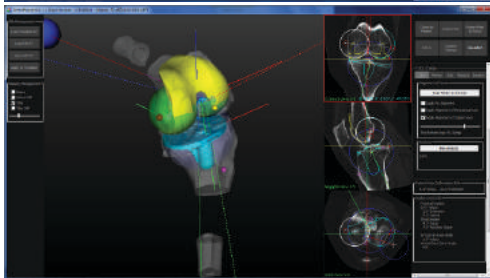


**3D Registration** for RoboDoc- 2013



**Scenario Editor** for Robot - 2012



# YOUTUBE LINK

### KIMI - 2013

http://www.youtube.com/watch?v=0g1nnFoLKEU

http://www.youtube.com/watch?v=GzFPysSzje4&feature=youtu.be

http://youtu.be/BBpelHrJ8Fc

### OMNI BASE - 2012

http://www.youtube.com/watch?v=fFpV15BbvQ0

http://www.youtube.com/watch?v=RSochyYrEw8

### KIBOT2 - 2012

http://www.youtube.com/watch?v=nFMrh2v6Yks

### KIBOT1 - 2011

http://www.youtube.com/watch?v=cIQ81Ap7-mU

### ENGKEY - 2011

http://www.youtube.com/watch?v=SOBTSp-UIKs

http://www.youtube.com/watch?v=csL-c3KP2OQ

http://youtu.be/wM09lb4_RNU

https://www.youtube.com/watch?v=PhmDkQizZSg

### E3 ROMA - 2008

http://www.youtube.com/watch?v=FwDYV-0zB-w

http://www.youtube.com/watch?v=22FGdLgvdc4