

## Kiwan Maeng

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CONTACT INFORMATION	CIC 4th floor Carnegie Mellon University 4720 Forbes Avenue Pittsburgh, PA 15213	Homepage: <a href="https://kiwanmaeng.com">https://kiwanmaeng.com</a> Email: <a href="mailto:kmaeng@andrew.cmu.edu">kmaeng@andrew.cmu.edu</a>
RESEARCH INTERESTS	My research interests lie in building efficient and reliable intermittent systems for energy-harvesting devices. Energy-harvesting devices have no continuous power source (e.g., battery), instead operating on a scarce and unpredictable energy gathered by its harvester (e.g., solar panel). I seek to broaden the possibilities of such devices using co-design of hardwares, compilers, and runtime systems.  <i>Research Area:</i> Intermittent Computing, Energy-Harvesting Devices, Embedded Systems, IoT, Hardware-Software Co-Design, Compilers	
EDUCATION	<b>Carnegie Mellon University</b> , Pittsburgh, PA Ph.D. in Electrical and Computer Engineering - Advisor: Prof. Brandon Lucia	Aug 2016 –
	<b>Seoul National University</b> , Seoul, Korea B.S. in Electrical and Computer Engineering <i>Graduated with Summa Cum Laude</i> (GPA: 4.14/4.30)	Aug 2016
REFERRED PAPERS	<ul style="list-style-type: none"><li>[1] Supporting Peripherals in Intermittent Systems with Just-In-Time Checkpoints <a href="#">Kiwan Maeng</a> and Brandon Lucia <b>PLDI 2019</b> - Programming Language Design and Implementation</li><li>[2] Adaptive Dynamic Checkpointing for Safe Efficient Intermittent Computing <a href="#">Kiwan Maeng</a> and Brandon Lucia <b>OSDI 2018</b> - USENIX Symposium on Operating Systems Design and Implementation</li><li>[3] Alpaca: Intermittent Execution without Checkpoints <a href="#">Kiwan Maeng</a>, Alexei Colin and Brandon Lucia <b>OOPSLA 2017</b> - Object-Oriented Programming, Systems, Languages &amp; Applications</li><li>[4] Intermittent Computing: Challenges and Opportunities Brandon Lucia, Vignesh Balaji, Alexei Colin, <a href="#">Kiwan Maeng</a>, and Emily Ruppel <b>SNAPL 2017</b></li></ul>	
OTHER PAPERS	<ul style="list-style-type: none"><li>[4] Getting Started with Intermittent Computing Brandon Lucia, Emily Ruppel, <a href="#">Kiwan Maeng</a>, Graham Gobieski and Milijana Surbatovich <b>MICRO 2018 Tutorial</b></li><li>[5] The Midnight Engineers (Book, Korean) <a href="#">Kiwan Maeng</a> Science comicbook for non-majors (<a href="#">LINK</a>). Won several awards including <i>10 Authors of the Year 2017</i>.</li></ul>	
AWARDS & HONORS	<b>Korea Foundation for Advanced Studies Scholarship</b> , KFAS <b>Summa Cum Laude</b> , Seoul National University <b>National Scholarship for Science &amp; Engineering</b> , KOSAF	2016 – 2021 Aug 2016 2010 – 2016

WORK EXPERIENCE	<p><b>Carnegie Mellon University</b>, Pittsburgh, PA Sep 2016 –  Research Assistant with Prof. Brandon Lucia</p> <ul style="list-style-type: none"> <li>• Tasks: Developing hardware and software systems for energy-harvesting devices. Recent work include building a compiler and a runtime system for strong termination assurance [1], or designing and implementing a new programming language for efficiency [2].</li> <li>• Skills: C, C++, LLVM (backend), Clang (frontend), Python, TI MSP430, GNU make</li> </ul> <p><b>Seoul National University</b>, Seoul, Korea March 2015 – Aug 2016  Research Intern with Prof. Hyuk-Jae Lee</p> <ul style="list-style-type: none"> <li>• Tasks: Developed hardware for computer vision.</li> <li>• Skills: Verilog, C, FPGA</li> </ul> <p><b>Rsupport Inc.</b>, Seoul, Korea Feb 2013 – Dec 2015  QA Engineer</p> <ul style="list-style-type: none"> <li>• Tasks: Developed internal test automation framework.</li> <li>• Skills: Java, Selenium</li> </ul>														
GRADUATE COURSEWORK	<table> <tr> <td>18-748 Wireless Sensor Networks</td> <td>Spring 2018</td> </tr> <tr> <td>18-643 Reconfigurable Logic: Technology, Architecture and Applications</td> <td>Fall 2017</td> </tr> <tr> <td>18-797 Machine Learning for Signal Processing</td> <td>Fall 2017</td> </tr> <tr> <td>15-745 Optimizing Compilers for Modern Architectures</td> <td>Spring 2017</td> </tr> <tr> <td>18-742 Advanced Computer Architecture and Systems</td> <td>Spring 2017</td> </tr> <tr> <td>14-642 Introduction to Embedded Systems</td> <td>Fall 2016</td> </tr> <tr> <td>18-743 Energy Aware Computing</td> <td>Fall 2016</td> </tr> </table>	18-748 Wireless Sensor Networks	Spring 2018	18-643 Reconfigurable Logic: Technology, Architecture and Applications	Fall 2017	18-797 Machine Learning for Signal Processing	Fall 2017	15-745 Optimizing Compilers for Modern Architectures	Spring 2017	18-742 Advanced Computer Architecture and Systems	Spring 2017	14-642 Introduction to Embedded Systems	Fall 2016	18-743 Energy Aware Computing	Fall 2016
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TECHNICAL SKILLS	<ul style="list-style-type: none"> <li>• C (Advanced) / C++, Python (Experienced) / Verilog, Java, Swift (Intermediate)</li> <li>• Developing compilers using Clang (frontend) and LLVM (backend).</li> <li>• Designing embedded systems, mainly using TI MSP430 microprocessor.</li> </ul>														
REFERENCES	Available on request														