

# Meghan Clark

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SUMMARY	Recent PhD in computer science at UC Berkeley. Experience developing end-to-end solutions at the intersection of IoT, mixed reality, and AI. Interested in distributing computation across cloud-edge architectures, particularly to support IoT and mixed reality 5G applications.
EXPERIENCE	<p><b>DevOps Engineer</b>, Edge Resource Manager UC Berkeley, 2022</p> <ul style="list-style-type: none"><li>• The EdgeRM research project distributes computational tasks across hybrid cloud-edge systems.</li><li>• Developed Terraform and Ansible infrastructure-as-code tools for creating Kubernetes clusters on AWS Elastic Kubernetes Service (EKS) and managing EC2 instances.</li></ul> <p><b>Lead Researcher</b>, Mixed Reality Network Introspection (<a href="#">video link</a>) UC Berkeley, 2019–present</p> <ul style="list-style-type: none"><li>• Developed real-time mixed reality monitoring and visualization of wireless network traffic.</li><li>• Instrumented WiFi and OpenThread mesh sensor networks.</li><li>• Golang and C in-network instrumentation, Python backend in AWS, MQTT, Unity visualizer.</li><li>• Received three-year DARPA special project funding to continue development.</li></ul> <p><b>Researcher</b>, Automotive Network Visualization UC Berkeley, 2021</p> <ul style="list-style-type: none"><li>• Collaborated with IBM Research team on collaborative perception in vehicular networks.</li><li>• Developed visualization of network communications between vehicles and infrastructure.</li><li>• Presented at GNU Radio Conference 2021 (GRCon'21).</li></ul> <p><b>Lead Researcher</b>, Augmented Reality IoT App UC Berkeley, 2020–2021</p> <ul style="list-style-type: none"><li>• Developed augmented reality Android app that reveals locations of smart home devices.</li><li>• Implemented natural language interactions with an intelligent assistant.</li><li>• Published results in <a href="#">ACM IMWUT 2022</a> journal.</li></ul> <p><b>Lead Researcher</b>, Smart Home Telepresence Runtime University of Michigan, 2015-2016</p> <ul style="list-style-type: none"><li>• Developed a provocative telepresence application using common smart home technologies.</li><li>• Developed a microservice-based runtime to run the same application code in different smart houses.</li><li>• Presented to industry stakeholders, including Amazon Lab126 and Mozilla Connected Devices group.</li></ul> <p><b>Lead Developer</b>, Open Source IoT library - lifxlan (<a href="#">GitHub</a>) Open Source, 2015–present</p> <ul style="list-style-type: none"><li>• Created popular open source Python library - 450+ stars.</li><li>• Implemented UDP-based network protocol to communicate with LIFX wireless light bulbs.</li></ul> <p><b>Lead Researcher</b>, Imitation Learning for Smart Lighting Control UC Berkeley, 2017</p> <ul style="list-style-type: none"><li>• Implemented LSTM deep learning recurrent neural network (RNN) using Python Keras framework.</li><li>• Trained system to anticipate when home residents will turn on lights and do it for them automatically.</li></ul> <p><b>NSF Graduate Research Fellow</b>, Analytics for Energy-Harvesting Sensors NSF, 2014–2017</p> <ul style="list-style-type: none"><li>• Developed and evaluated machine learning algorithm to convert unitless measurements from simple, non-intrusive energy-harvesting power sensors into Watts.</li><li>• Published and presented results at <a href="#">ACM e-Energy 2014</a>.</li></ul> <p><b>Software Engineer</b>, Sensor Networks Oakwood Controls, Jan–June 2012</p> <ul style="list-style-type: none"><li>• R&amp;D work for the U.S. Army's Night Vision and Electronic Sensors Directorate (NVESD) on automatic discovery, configuration, and control of heterogeneous sensor networks.</li></ul>
EDUCATION	<p><b>PhD in Computer Science</b>, University of California, Berkeley 2021</p> <p><b>Masters in Computer Science and Engineering</b>, University of Michigan 2017</p> <p><b>Bachelor of Science in Computer Science</b>, George Mason University 2011</p>
SKILLS	<p><b>Cloud and microservices:</b> AWS, Docker, Docker Compose, Kubernetes, EKS, Terraform, Ansible</p> <p><b>AI/ML:</b> Keras, neural networks, RNNs. Exposure to PyTorch, TensorFlow, CNNs, transformers, yolo</p> <p><b>Embedded systems:</b> C, Arduino, MQTT, OpenThread, BLE, PCB design (EAGLE), soldering</p> <p><b>Mixed reality:</b> Unity SteamVR, Android ARCore, A-Frame, WebXR</p> <p><b>Languages:</b> Python, C, C#, Javascript, Node.js, Golang, Java, Erlang</p> <p><b>Radio:</b> Amateur Radio License - General (KN6THQ)</p>