Emily Pillmore

Personal Data

Date of Birth:	California, USA | 28 Feb 1990
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Work Experience

2018-Current — Director of Engineering/Advisor at **Kadena**, NYC/Remote Hybrid

Distributed Systems, Formal Verification, Language Design

Worked my way up from a Senior Software engineer to being an Advisor for the company, as well as its Director of Engineering. Managed multiple teams totaling 25 direct reports, maintained individual contributor status on Kadena's Core Engineering products, managed and contributed to new features and 3rd party integrations that directly impacted Kadena's business value and capabilities. Took care of hiring, budgeting, scoping Core Engineering developers with the help of product managers. Reported directly to the CTO and CEO of Kadena.

2021-2022 — CTO at **Haskell Foundation**, Remote

Open source project leadership, fundraising, and technical direction for the Haskell language.

2021-2022 — Advisor at SundaeSwap, Remote

Advisorship for the SundaeSwap DEX. VC Fundraising, formal verification team hiring strategy.

2017-2018 — Senior Software Engineer at **Cake Solutions**, NYC

Distributed Systems at Scale

Streaming architecture and distributed systems at scale. Focus was on the Media Servces/Media Targeting/Media Security (mdrm) protocols.

Tech: *Scala, AWS S3 + EC2 + KMS, DynamoDB, Kibana, ElasticSearch, Gatling, Cats, Protobuf, Akka, Akka-http, Netty, http4s, Apache Spark, Docker Compose, Vagrant*

2015-2016 — Assistant Vice President at **Bank of America**, NYC

Reference data, RDF triples, semantic graph engines, Scala, Spark

Reference data pipelines and core data infrastructure, semantic web.

Tech: *Scala, Neo4j, Python, R, Gremlin, TinkerPop, Spark, RDF*

2015-2017 — Consultant/Expert Advisor at **Platinion North America**, NYC

Data analysis, CCAR audit, audit consulting, model validation, reverse model engineering, technical documentation, statistical analysis

Consultant for Platinion North America (a BCG company), focusing on model validation, reverse model engineering in C++, technical drafting, and data audit for CCAR projects on Wall St.

Tech: *C++, SAS, Python, R*

2015-2015 — Operations Analyst at **Goldman Sachs**, Salt Lake City

FX confirmations group

Education

May 2014 — Bachelor of Science in Mathematics, **University of Utah**, Salt Lake City

Emphasis on Topology and Geometry | Major: Mathematics

Publications

January 2020	*Profunctor Optics: a categorical update* (arxiv/2001.07488)
February 2020	*Profunctor Optics: The Categorical View* (n-category cafe)

Certifications

- Lightbend Apache Spark for Scala - (Instructor)
- Lightbend Scala Language - Expert (Instructor)
- Lightbend Scala Language - Professional (Instructor)
- Lightbend Akka for Scala - Expert (Instructor)
- Lightbend Akka for Scala - Professional (Instructor)

Talks

January 2023 — **SEMIBUG**
An Invitation to Haskell
1-hour talk for the South Eastern Michigan BSD User group, for beginning Haskell enthusiasts and non-believers. Talk

September 2020 — **Haskell Love**
Hulk Smash
45-min talk introducing a new geometro-topological viewpoint to the Haskell lexicon, showing how to make use of some relatively simple datatypes to draw a direct analogy with dicrete forms of the Wedge Sum, Pointed Product, and Smash product of algebraic topology. Talk

September 2019 — **Scala World**
Type Arithmetic and the Yoneda Lemma
90-min talk building a notion of arithmetic in Cartesian Closed Categories with special emphasis on the philosophical perspective of reasoning via the Yoneda Lemma and Leibniz Principles. Talk

June 2019 — **LambdaConf**
Isomorphic Reasoning
A 6-hour workshop building the foundational knowledge to understand "type arithmetic" in Cartesian Closed Categories, with special emphasis on proofs via the Yoneda lemma. Talk

June 2019 — **LambdaConf**
Adjunctions and Free Constructions
A 90-min talk teaching the fundamentals of adjunctions and free constructions in Category Theory. Talk

January 2019 — **SBC**
Formally Verified Smart Interfaces
A 5-minute lightning talk at Stanford Blockchain Conference detailing recent innovations I'd made in formally verifying smart contract interfaces (think Haskell typeclasses with laws!). Video

Meetups

Leader:	NY Homotopy Type Theory (HoTT) meetup
Co-organizer:	NY Haskell User Group, NY Category Theory Meetup
Participant:	CUNY Graduate Category Theory Seminar

Other Interests and Activities

Trail Hiking, Music (I am a fairly competent Latin Jazz guitarist), hobbyist electronics engineer (building guitar amplifiers and electronics components for guitar).