

Theodore Butler

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🌐 [/theodus](https://theodus.com)

Education

Drexel University – Philadelphia, PA
Bachelor of Science in Computer Engineering

September 2016 - June 2021

Publications

- › Paul Liétar, [Theodore Butler](#), Sylvan Clebsch, Sophia Drossopoulou, Juliana Franco, Matthew J. Parkinson, Alex Shamis, Christoph M. Wintersteiger, and David Chisnall. `snmalloc`: a message passing allocator. *2019 ACM SIGPLAN International Symposium on Memory Management*

Experience

Edge & Node – Remote
Principal Software Engineer

July 2021 - September 2026

- › Primary maintainer of the Graph Gateway, a distributed system routing 1 billion queries per day
- › Designed and implemented sophisticated selection algorithm balancing quality of service, fairness, and trust minimization
- › Integrated Redpanda for communication across gateway systems, billing, and data science
- › Designed a DataFusion-based streaming query engine for processing blockchain data
- › Contributed to the design of multiple novel solutions for trust-minimized micropayments with smart contracts
- › Established comprehensive monitoring, incident response, integration testing, and release processes for production reliability
- › Led cross-team collaborations on protocol design, security audits, and engineering efforts

Aquent LLC – Remote
Research Software Development Engineer at Microsoft

May - November 2020

- › Contributed to Project Verona, a research programming language to explore the concept of concurrent ownership
- › Designed a novel system for managing back-pressure within the language runtime
- › Verified the correctness of the runtime back-pressure design using TLA+

Siemens Corporate Technology – Munich, Germany
Performance-Driven Parallel Software Research and Development Co-op

April - September 2019

- › Created a framework for measurement and analysis of Industrial Internet of Things (IIoT) protocols
- › Maintained IIoT protocol gateway capable of connecting devices on DDS, WAMP, MQTT, and OPC-UA networks
- › Developed and presented demonstrations of factory automation technologies using image recognition

Microsoft Research Limited – Cambridge, UK
Research Intern

April - September 2018

- › Transitioned a distributed system framework for secure multi-party computation, Microsoft CCF, from a research PoC to its first set of production environments
- › Implemented in-memory representation of distributed key-value store, optimized for transaction rollback and memory efficiency
- › Contributed to RAFT consensus and TLS implementations suitable for execution within hardware enclaves
- › Automated continuous integration testing for multiple projects

Pony Programming Language – Remote
Core Team Member

April 2016 - July 2022

- › Created and maintained standard library packages
- › Facilitated RFC process for proposing language and standard library changes
- › Contributed to compiler implementation and code review processes
- › Created documentation and tutorials for users of the language and standard library
- › Maintained tools for release automation and distribution

Skills

Rust, Pony, C, C++, Typescript, Go, Python, Shell, VHDL, Solidity, TLA+, Idris, Typst