

CANER DERİCİ

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Extended (CV): cderici.github.io/resume

SELECTED PROJECTS

Juju: Universal Operator Life-cycle Manager¹

- Juju is a distributed orchestration and modeling tool for deployment of complex cloud workloads. It manages the life-cycle of operators for Kubernetes and traditional Linux apps and microservices. I work full-stack on the Juju team (of 15). I help optimize performance for the distributed workloads (changing the data model from MongoDB to dqlite), I maintain the main clients (e.g., cli, terraform provider, python-libjuju²), assist in maintaining release cadence across multiple version tracks, and perform general bug fixes and maintenance. Go and Python.

Terraform Juju provider³

- This is a provider that enables integration with Juju while managing terraform environments. I implemented new resources/features (e.g., manual provision on aws), worked on migrating from the sdk2 to the provider framework, and maintained release cadence of new versions. All in Go.

Pycket: A tracing JIT compiler for self-hosting Racket⁴

- PhD project on programming languages. Main developer and maintainer for 5 years. I re-designed the compiler front-end to make Racket bootstrap on Pycket, i.e., achieved a full Racket implementation on RPython framework. Developed performance analysis/debugging tools, theoretical models, implemented optimizations, data structures and run-time primitives.

Rax: A full-stack nanopass compiler from a small subset of Racket to x86_64 assembly

- Open source project. Built and tested all the passes (e.g., closure conversion, register allocation, code-gen, etc.). Implemented optimizations, e.g. loop-invariant code motion, constant propagation, tail-calls etc.

HazirCevap (Witty): A closed domain question answering system for high school students

- MSc thesis project on NLP and machine learning (see Publications). Lead the R&D (3 faculties and 4 grad students). Developed statistical model for question analysis, reliability and relevance metric for web-documents, used Indri engine for IR, response generation. Implemented full stack in Python.

PUBLICATIONS

- Flatt M., Derici C. Dybvig R. K., Keep A. et. al. "Rebuilding racket on chez scheme (experience report)", ICFP'19
- Derici C. et. al. "A closed-domain question answering framework using reliable resources to assist students" Natural Language Engineering'18
- Derici C. et. al. "Question analysis for a closed domain question answering system", CICLING'15
- Derici C. et. al. "Rule-based focus extraction in Turkish question answering systems", SIU'14
- Başar R. E., Derici C., and Şenol Ç. "World With Web: A compiler from world applications to JavaScript". Technical Report, Scheme and Functional Programming Workshop'09

¹<https://juju.is/>

²<https://github.com/juju/python-libjuju>

³<https://github.com/juju/terraform-provider-juju>

⁴<http://www.github.com/pycket/pycket>

EXPERIENCE

- Canonical USA, Software Engineer II (L3), 2021-Present. Enterprise cloud engineering, Juju team. Full-stack. Mainly in Go, Python.
- Indiana University, Course Instructor, Spring 2021. Compilers and Principles of Programming Languages.
- Indiana University, Teaching & Research Assistant, 2015-2020. Taught Advanced Compilers, Domain Specific Language Design, etc.
- Asesco SEE Group, Product Development Specialist, 2012-2013. Developed and tested virtual point-of-sale applications. Used Java, Tomcat, Spring, Mercurial, Jira, Jenkins.
- Istanbul Bilgi University, Teaching Assistant, 2010 - 2013. Taught Data Structures & Algorithms, Programming Language Principles, Database Systems.

EDUCATION

- MSc, PhD (abd), Indiana University, USA, 2015 - 2021, CS, Programming Languages
- MSc, Boğaziçi University, Turkey, 2011 - 2014, CS, NLP, Machine Learning
- BSc, Istanbul Bilgi University, Turkey, 2005 - 2010, Computer Science

TECH SKILLS

Go	●●●●●●
Python	●●●●●●
Racket/Scheme/Lisp	●●●●●●
Java, C/C++	●●●●●●
Haskell	●●●●●●
SQL, Matlab, R, JavaScript	●●●●●●
Linux	●●●●●●
Lxd, Docker - Containerization	●●●●●●
Aws, Gce, k8s - Cloud Clusters	●●●●●●
Git, Hg - Version Control	●●●●●●
GH Actions, Jenkins - CI/CD	●●●●●●
VSCode, Golang, Emacs, L ^A T _E X	●●●●●●

AWARDS & SCHOLARSHIPS

- Full Scholarship for PhD, 2015-2020
- Research Scholarship for MSc 2012 (fully funded for 2 years)
- Full Scholarship for BSc, 2005-2010
- Scholarship for a research project on teaching natural languages to hearing impaired, 2014.

SPOKEN LANGUAGES

Turkish (native)	●●●●●●
English (living in US since 2015)	●●●●●●