CANER DERİCİ

Software Engineer – ABD PhD Candidate, Computer Science, Programming Languages

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SELECTED PROJECTS

Juju: Universal Operator Life-cycle Manager[1]

- Juju is an orchestration and modeling tool for deployment of complex cloud workloads. It manages the life-cycle of the charmed operators for Kubernetes and traditional Linux apps, with declarative relations between operators for automated microservice integration. It also facilitates day 2 operations, such as scaling, upgrading and monitoring. I work in the core dev team (of 15). I maintain the main clients (e.g., cli, python-libjuju[2]), work on the facade API, charmhub integration and general maintenance. Mainly in Go and Python.

Terraform Juju provider [3]

- A provider that enables integration with Juju while managing terraform environments. Started developing as part of my work on the Juju API. Implemented new features, maintained release cadence of new versions. All in Go.

Pycket: A tracing JIT compiler for self-hosting Racket[4]

- 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 natural language processing 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, answer generation. Implemented both the front and back-end 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

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[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

EDUCATION

- **PhD Candidate** , CS, Indiana University, USA
- **PhD** CS, Boğaziçi University, Turkey (Dropped)
- **MSc** CS, Boğaziçi University, Turkey
- **BSc** CS, Istanbul Bilgi University, Turkey

EXPERIENCE

- **Software Engineer II (L3)**, Canonical Ltd, 2021-Present. Juju core team. Mainly in Go, Python.
- **Product Development Specialist**, Asseco SEE, 2012-2013. Developed and tested virtual point-of-sale applications. Used Java, Tomcat, Spring, Mercurial, Jira, Jenkins.
- **Course Instructor**, Indiana University, Spring 2021. Introduction to Computer Science (HtDP Style Functional Programming).
- **Teaching & Research Assistant**, Indiana University, 2015–2020. Taught Advanced Compilers, Domain Specific Language Design, etc.
- **Teaching Assistant**, Istanbul Bilgi University, 2010 – 2013. Taught Data Structures & Algorithms, Programming Language Principles, Database Systems.

TECH SKILLS

Skill	Level
Python	●●●●●
Go	●●●●○
Racket/Scheme/Lisp	●●●●●
Java, C/C++	●●●○○
Haskell	●●●○○
SQL, Matlab, R, CSS, JavaScript	●●●○○
Linux	●●●●●
Docker, LXD - Containers	●●●○○
AWS, k8s - Cloud Clusters	●●○○○
Git, Hg - Version Control	●●●●●
Maven, Jenkins - Auto Deploy	●●●●○
Travis, GH Actions - CI	●●●●●
LaTeX	●●●●○
Goland, Emacs, VSCode	●●●●○

AWARDS & SCHOLARSHIPS

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

SPOKEN LANGUAGES

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