Onur Şahin

Computer Science Student, Open source contributor, Amateur Guitar Player

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Hackerrank: https://www.hackerrank.com/sahinonur2000
cGPA: 3.42/4

Currently

Doing internship research with iVis-at-Bilkent organization. Studying compilers in his free time

Interests

Parsers, Bytecode Interpreters, Compilers, Functional Programming, Mobile Development, Virtual Machines, Desktop GUI development

Experiences

Research and Internship at iVis June 2020 - Not Finished

Incremental Packing Research (In progress)

- Packing of disconnected graphs is an important topic in various areas. There are very efficient algorithms in terms of fullness but these algorithms ignore the initial layout of the graphs. We are trying to come up with a feasible packing algorithm that works incrementally so that user preserves their mental map

Cytoscape Layout Utilities https://github.com/iVis-at-Bilkent/cytoscape.js-layout-utilities

- Formerly, the packing algorithm of this extension was centering to the a fixed point
- Added the ability to preserve to the current center of components
- Fixed some bugs that would lead the algorithm to crash
- For my contributions you can check PR #19

Cytoscape Context Menus https://github.com/onsah/cytoscape.js-context-menus

- Removed jQuery dependency by replacing functionality of jQuery with DOM api or implementing the similar functions
- Added recursive submenu feature. Formerly the extension only had top level menu and no submenu. I added nested submenus so that any menu item can have submenus
- Configured project with webpack and babel to develop using modern js but deploy in more compatible js version for browsers. Learned about modern js tools such as bundlers and transpilers

Internship at FNSS Savunma Sistemleri A.Ş. 16/07/2019-15/08/2019

Line based diff utility

- Implemented a diff utility similar to git but specialized the tool for a particular output format.
- **Implemented Myer's algorithm from scratch**
- Achieved a scalable performance for large inputs by using Myer's algorithm
- **Software is currently being used at FNSS**
- Followed a mix between Object Oriented and Functional programming design principals while developing
- Added inline diffs on top of line diffs
- Implemented a simple and useful web UI using plain Javascript and Html

ICFP 2020 August 2020

ICFP is a conference about functional programming. It is an event of SIGPLAN.
Attended here as a listener because I am interested in programming languages design and implementation.

Teaching Interpreters Fall 2019

Teached how to implement interpreters from scratch for 5 weeks

Teached BNF and EBNF notation
Teached how to write a recursive descent parser without a parser library
Implemented a simple language for educational purposes
Source code of the course is here: https://github.com/onsah/Interpreter

Tutor Assistant on CS115 labs Spring 2019

Helped students to complete their lab assignments by teaching basic programming principles

Studied python language
Teached basic programming concepts

Internship at PEKS Automation A.Ş. Summer 2018

Implemented geolocation algorithm
Contributed the development of an embedded GUI program.

Projects & Contributions

Flux programming language: https://github.com/onsah/Flux_rs/ 2019 Summer

Fully featured scripting language implementation
Bytecode interpreted
Completely written from scratch without using external libraries for parsing, compiling, etc.
Handwritten recursive descent parser
Implemented using Rust

Contribution to GJS: https://github.com/GNOME/gjs July 2019

Gjs is a javascript runtime used for Gnome Desktop Environment
Added unit tests which increased code coverage

Conecto: https://github.com/hannesschulze/conecto

Added clipboard sync functionality which allows user to copy from phone and paste from pc and vice versa.
Used Gtk UI library and Vala programming language
You can check my contributions at PR #11

Contribution to RustPython standard library: May 2019
https://github.com/RustPython/RustPython/pull/943

Learned insights about interpreters
Implemented some python standard library functions as native functions

Awards and successes

Placed 156th among 1.5 million student in Turkey University Entrance Exam (Ygs) 2016

Science Project competition, Honor award, Genius Olympiads, Oswego, USA 2015

Education

Bilkent University 2017-2021

Computer Science
Full Scholarship

Bilim ve Sanat Merkezi 2006-2016

Bilim ve Sanat Merkezi is a special foundation by the Turkey government which focuses on education of gifted children. In early years students start with general concepts like scientific learning then they assigned to more specialized areas like physics or math.

TextBooks

The textbooks that I read in my free time:

Modern Compiler Construction in ML (Currently Reading)
Programming – Principles and Practice Using C++ - Bjarne Strousburp
The Rust Programming Language - Steve Klabnik and Carol Nichols

References

Tuna Çağlar Gümüş

He was my supervisor at my internship in FNSS company. He offered to me to be a reference for me.

Lead PLM Systems Engineer
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