

Onur Şahin

Computer Science Student, Open source contributor, Hobbyist
Guitar Player

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cGPA: 3.42/4

Currently

Doing internship research with iVis-at-Bilkent organization.

Interests

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

Education

Bilkent University
Computer Science
Full Scholarship

2017-2021

Bilim ve Sanat Merkezi

2006-2016

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

Experiences

Research and Internship at iVis

June 2020 - Not Finished

Incremental Packing Research (Not finished yet)

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 point (0, 0).

Added the ability to pack the components according to the old center.

Fixed some bugs in the code such as converting decimal to integer

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 by hand

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

Internship at FNSS Savunma Sistemleri A.Ş.

16/07/2019-15/08/2019

Line based diff utility (TermDiff)

Implemented a diff utility similar to git but specialized it for a particular output format.

Implemented Myer's algorithm from scratch

Achieved linear time complexity 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

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.

ICFP 2020

August 2019

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.

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

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/hanneschulze/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

TextBooks

The textbooks that I read in my free time:

Modern Compiler Construction in ML (Currently Reading)

References

Tuna Çağlar Gümüş

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

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