**Tobias Kroll**

6516 Redstone CT, Arlington, TX – (682) 239 1358 – tkrolljr@gmail.com

Education

### BS in Computer Science August 2015 – May 2019

## University of Texas at Dallas

* Academic Excellence Scholarship
* Computing Scholars Honors Program

### MS in Computer Science August 2020 – May 2022

## University of Texas at Arlington

* GPA – 3.67
* Concentrations in Artificial Intelligence and Computer Architecture

Advanced Coursework

|  |  |
| --- | --- |
| * Network and Application Security * Advanced Data Structures and Algorithms * Database Systems * Artificial Intelligence Design | * Software Engineering * Machine Learning * Embedded Systems * Computer-Aided Verification for Systems |

Technology Skills

* Programming Languages: C, C++, Java, Python, Bash
* Web Technologies: HTML, CSS; AWS, Azure
* Database Systems: SQL, MySQL, noSQL
* Operating Systems: Mac OS, Linux, Windows

Work Experience

## Freelance Harpist – self-employed 2010 - present

* Performed for weddings, company events, and coffee shop settings, individually and in ensemble
* Sought clients and opportunities to perform
* Elicited requirements and conditions from clients and negotiating appropriate pricings
* Devised practice regimen and event scheduling according to the client’s requests

## Graduate Teaching Assistant – University of Texas at Arlington August 2020 – present

* Chemistry for Engineers Laboratory
* Part of the initial move to online and hybrid instruction during response to COVID; part of the cohort to navigate and refine the department’s protocols and resources in regards to the new instructional mode

Technical Projects

## “Tornado” Particle System

* Physics-based particle system with 50000 particles mimicking a Tornado
* Explores algorithm implementations for various gradient decent and similar derivative approximation techniques
* Technologies used: C++, OpenGL

## Derivation of Empirical Potentials using Bayesian Optimization - <https://github.com/TKrolljr/BayesOpt>

* Software Suite optimizing Empirical Potentials used in Molecular Dynamics Simulations
* Solves efficiently in high dimensionality; several ePotential formats supported
* Technologies used: Python, skopt, LAMMPS

## iGetHappy LLC Pictorial Emotion Recognition Senior Design Project

* Worked on a team to deliver software that recognizes the emotion displayed in an arbitrary photo of a face
* Collaborated to research, design, and implement solutions regarding the goal – final implementation used Viola Jones Facial Detection, convoluted neural networks, and a Flask WebAPI
* Lead presentation and demonstration of the product to peers, professors, and industry sponsors
* Technologies Used: AWS, Python – Flask, Tensorflow

Language skills

* Fluency in English and German; working proficiency in Spanish
* Dual citizenship US, Germany