

# CLIFFORD BAKALIAN

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## EDUCATION

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**University of Maryland, College Park**

Master of Science in Computer Science

*May 2021*

GPA: 4.000

**University of Maryland, College Park**

Bachelor of Science in Computer Science

Bachelor of Arts in Philosophy

*May 2020*

Phi Beta Kappa National Honors Society

GPA: 3.858

## WORK EXPERIENCE

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**University of Maryland**

*Instructor*

August 2021- Present

- Taught courses on Discrete Mathematics, Programming Paradigms, and Git and Project Management
- Managed 43 TAs over 3 courses to help grade, write exams, and hold office hours
- Designed projects and testing frameworks for each course
- Designed exams which focused on application and theory

**University of Maryland**

*STIC Facilitator*

August 2020- Present

- Co-Designed and co-taught a 1-credit course focusing on various programming paradigms
- Produced projects in Prolog, Forth, Intercal, Rust, and a compiler in Flex/Bison and Racket
- Designed projects and testing frameworks for each topic
- Designed exams which focused on application and theory

**University of Maryland**

*Teaching Assistant - Discrete Structures, Programming Paradigms, Object Oriented Programming II*

January 2018 - Present

- Led 50-80 minute discussion sessions on proofs, logic, data structures, Java, Ruby, OCaml, Rust
- Wrote scripts for the automation of grading
- Lead a team of 4 on creation of projects, discussion exercises, and exams
- Volunteered to teach JavaScript for Girls Who Code

**OMB Warehouse**

*Data Manager/Analyst*

June -August 2017, December 2017-January 2018

- Designed a TensorFlow neural network in Python to develop autonomous programs and data processing modules

## RESEARCH EXPERIENCE

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**University of Maryland - Hanan Samet**

*Undergrad Research Assistant*

May 2019 - May 2020

- Developed the iOS application of the NewsStand System in Objective-C and C

**University of Maryland - Don Perlis**

*Undergraduate Research Assistant*

November 2018 - December 2019

- Worked on logical reasoning and analysis of self based reasoning in robots

## GRADUATE COURSE WORK

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### **Privacy in Data Management Systems**

- Implemented a way for "machine unlearning" to occur in compliance with "right to be forgotten"

### **Computational Psycholinguistics**

- Designed a Pun generator based on phonemes

### **Compiler Construction**

- Helped design modules and analyze effectiveness for the Binary Analysis Platform

### **Network Security**

- Analyzed the effectiveness of the mobile web certificate authentication process in Android phones

### **Decision Making for Robots**

- Built autonomous robots capable of mapping out an area

### **Wireless and Mobile Systems**

- Designed an acoustic indoor localization protocol

## PROJECTS

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### **Android App Development**

- Developed Android mobile games and camera application in Kotlin, Java and C

### **Web and Development Server**

- Host and maintain Linux git servers, discord-bots, websites on raspberry-pi
- Wrote Bash scripts to help automate maintenance.
- Developed APIs and Apache Web apps in HTML, Django, and Ruby on Rails
- Host SQL server used for Chat-Bots

### **Robotic and IoT Devices**

- Built and designed small Arduino robots and IoT devices and data servers in C and Golang
- Wrote APIs for devices to be accessed over a closed network

### **Client Side Encryption Application**

- Produced C code to handle encryption and SSH/FTP transferring of sensitive data

### **Class Projects**

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|---------------------------------------|--|
| • Principles of OOP (Java)            | • Systems (C)                            |
| • Lexing/Parsing (Racket, Ocaml)      | • Web security (Ruby, C, Rust)           |
| • AI/Deep Learning (Python)           | • Advanced Data Structures (Lisp, C)     |
| • Compilers (Racket, x86 Assembly, C) | • Systems Architecture (x86 Assembly, C) |
| • Database Systems(SQL, Spark)        |  |

## TECHNICAL SKILLS

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### Tools and Services

- Experienced: GitHub, Arduino, Vim, Arduino
- Proficient: Docker, Android Studio, XCode, GDB
- Familiar: Vagrant, TensorFlow, ROS, Jupyter, CRUD tables, LAMP stacks, Agile environments, Spark, Ruby on Rails, Django

### Languages

- Experienced: C, Python, Java
- Proficient: Ocaml, Ruby, Racket, SQL, Rust, Bash, Visual Basic
- Familiar: GoLang, Assembly, Lisp, Objective-C, C++, Forth, Prolog, Intercal

## PUBLICATIONS

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### Live and Learn, Ask and Tell, Agents over Tasks

*2019 IWSDS*