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Summary

Business Analyst, Social scientist, Entrepreneur, and Software Developer all in one. Solving all the worlds problems using robotics is my life's aspirations.

Experience

Associate Product Manager

Tikdin - Break into Tech

Dec 2022 - Present (5 months)

Involved in app strategic choices

Product design discussion and directly contribute to the Tikdin app project

User marketing and research

Chief Technology Officer

Cryptorama

Jun 2022 - Present (11 months)

Technical coding of products and architecture

Developing Sales and Technical strategy for products

NFT development

<https://gust.com/companies/cryptorama>

<https://jf.media/23-most-promising-stock-exchanges-startups-with-seed-funding-united-states/>

Chief Technology Officer

AncyVerse

May 2022 - Sep 2022 (5 months)

Working on front end code design

Blockchain research of social media solutions

Software Developer

Columbia University Robotics Club (CURC)

Jan 2022 - Apr 2022 (4 months)

Working on Python control of thruster, motor and camera control for underwater UUV in ROS

GitHub and Git repo management of code

Agile software format

2021-2022 MATE ROV competition

Robotics Animation Member

Columbia Space Initiative

Mar 2021 - Jun 2021 (4 months)

NASA Break the Ice Challenge animation design member
Blender CAD modelling and 3D animation
Team received honorable mention and \$25,000 award to further development



Robotics Design Team Member

Columbia Space Initiative

Oct 2020 - May 2021 (8 months)

NASA Robotic Mining Competition Lunabotics representing Columbia University as a member of the design team

Assisting in technical design of the mechanics and structure of robotic structure (based on budget we must come up with CAD models and designs for 3D printing, machining, and ordering parts)



Founder

Kiefer Robotics LLC

Nov 2017 - May 2021 (3 years 7 months)

Working on four robotics projects in environmental robotics: from research, to building, to testing

(1) An app automated robot device for crop plants that can eliminate harmful pests, (2) an underwater sprayer robot for spraying chemicals for water treatment, (3) a mobile robot for in taking organic waste for self-powering the robot, (4) a mobile, self-powered water robot to ward off sharks

Working with assistant on Embedded systems and App development (1 Android app and two prototypes are developed in first project)

Java and Arduino-C programming of devices

3 members total for one of the projects

Filed 1 provisional patent for first project

Working on publication based on the research for two products

National Laboratory Testing for one device to test product validity

Also working with National Energy Technology Laboratory (NETL) on commercializing three technologies



Technical Specialist

New Work City

Nov 2020 - Apr 2021 (6 months)

Working on Front end development and Blockchain contract development such as Ethereum smart contracts using Remix IDE



Growth and Marketing Strategist

Local & Yonder Inc.

Sep 2020 - Apr 2021 (8 months)

Research, content marketing, and outreach for Columbia University funded startup



Scrum Master/ Researcher

Columbia Space Initiative

Jan 2020 - Nov 2020 (11 months)

Project Management for software development of robotics algorithms for NASA Competition for Columbia University

Git processing, GitHub, and GitLab repository of source code
Multi-SLAM robot processing code using condensed filter option
Docker and Docker Hub for code verification from ROS simulations

Co-Founder

Makris Technology

May 2020 - Sep 2020 (5 months)

Working on prototyping device for hospital patients in startup company
CAD modelling, cost estimation for materials, and commercial growth for products
Columbia Eugene Lang Entrepreneurship Center startup in incubator process

Student Fellow

Columbia Business School

Jul 2020 - Jul 2020 (1 month)

Working on assignments and company development in Entrepreneurial Boot Camp Fellowship in Lang
Entrepreneurship Center
Analyzing advanced entrepreneurial concepts

Robotics Software Engineer

UBS

Feb 2018 - Aug 2019 (1 year 7 months)

Lead quad-state (New Jersey, New York, Connecticut, and Tennessee) RPA developer
Automation Anywhere (AA) process for financial services robots

RPA development for multiple robot automation

VBA and SQL processing of excel macros for automation

Designing new algorithms for robot automation

Agile & Scrum work layout

JIRA & Kanban platform maintenance

XML programming for AA robots

CSV and Excel file processing

Software documentation editing

Github/Git processing of AA robots

Microsoft Visio for systems engineering on AA robots

Certified AA developer

Certified UiPath Business Analyst

Certified UiPath Solution Architect

Future work on Chatbots & Machine Learning for UBS financial services

UML software diagrams

1 Worldwide UBS publication on my successful robot (includes first robot with artificial intelligence concepts such as fuzzy logic)

Working with Directors and team leaders to develop bot technology in reducing the amount of time needed to perform certain business tasks, which increases daily efficiency and allows UBS employees to work on other business functions they previously would not have had time for.

Research Staff - Field Robotics Center

Carnegie Mellon University School of Computer Science



Sep 2017 - Feb 2018 (6 months)

Worked under guidance of Professor David Wettergreen in CMU Field Robotics Center

Mechanical and Electrical repair of an UUV (reefbot)

Python programming of thrusters (3) and camera feedback

OpenCV work for camera tracker addition (pixels follow objects underwater above a certain speed)

Integration of Python code in ROS (cmake, rostopic, roslaunch, and joystick controller)

Android Studio (Java based) app for camera feedback and potential thruster control

Github code: <https://github.com/mkiefer1/reefbot-1>

Video footage: <https://www.youtube.com/watch?v=RsMnkMqWoC4>, <https://www.youtube.com/watch?v=muQypPd0uBo>, <https://www.youtube.com/watch?v=VIXMLPx-ms>



Search Based Planning Lab Intern

Carnegie Mellon University School of Computer Science

Sep 2016 - Feb 2018 (1 year 6 months)

Worked under guidance of Professor Maxim Likhachev in SBPL and Andrew Dornbush

Helped determine coordinates of 3D robotic environments in Blender

Successfully drafted the coordinates & quaternions for simulation testing

ROS collision check modeler for Mitsubishi Artificial Intelligence project

RVIZ experience in identifying motion collisions with the PR2 robot

Used ROS code to verify collision check

Worked with Robotics graduate students in team group

Successfully identified multiple collision errors in Robotics models

Python API programming search for Blender meshes in humanoid environment

Python programmed 'Point selection and plane fitting plugins' in Blender using Deep Learning prerequisites: Numpy and Scipy

HTML5, CSS, and JavaScript research Web interface for C++ planner for R* search algorithm demonstration (<https://codepen.io/MAXKIEFER/pen/QQqOxp>)



Scrum Master Certification Training

Scrum Alliance

Oct 2017 - Oct 2017 (1 month)

Trained in Agile Methods: SCRUM, Lean, Kanban, xP, and DevOps

Passed CSM exam and officially Certified Scrum Master



Research Assistant

Carnegie Mellon University

May 2017 - Oct 2017 (6 months)

Writing and researching new potential policies in a chapter for President Donald Trump's advisers on how to transition automation to the workplace in America to increase minimum wage and job growth.

Written nearly 9,000 words in new potential policies for the creation of government agencies for automation adjustment to American workforce



Contracted Project- Robotics

MellonHead Labs

Aug 2017 - Sep 2017 (2 months)

Researched a chemical analysis of sodium carbonate for underwater spraying

Designed potential mechanical and electrical components of underwater robot (coralbot)

OpenCV research for underwater distance detection

Researched Alexa Voice app control for underwater robot



Research Staff

Carnegie Mellon University - School of Computer Science - Language Technologies Institute

May 2017 - Aug 2017 (4 months)

Worked under the guidance of Professor Alan Black in text to speech conversion chatbots

Neural network processing for speech to text translation (Festvox, Festival speech tools)

C++ machine learning algorithm processing in Linux OS (VM Oracle)

WAV recordings of High German to Zuri Swiss German data

Zuri Swiss German Text to Speech chatbot (first chatbot ever in Zuri Swiss German)



Independent Researcher- Engineering & Public Policy

Carnegie Mellon University

May 2017 - Aug 2017 (4 months)

Researched OpenSCAD design model for new design of robot for using organic waste to become a self-powered robot.

Successful calculations proving robot to intake organic waste material at any landfill

Thermal, mechanical, and electrical analysis of robotic system

In process of drafting research paper for publication by national journals with Dr. Hari Mantripragada



Project Assistant

Carnegie Mellon University School of Computer Science

Jan 2017 - May 2017 (5 months)

1. Helped build environment and test experiment of Slotbot

Assisted in machining and mechanical design of Slotbot

Slotbot: tethered micro robot with LED and mini camera used for entering small nuclear pipes to detect contamination

Worked under guidance of Professor William "Red" Whittaker

2. Worked on using OpenScad and MATLAB in field experiments to design an arena dimension for display of multi-robot flying systems (RASL lab)

Assisted in Vicon V8 camera calibration and kinematic calculations

Worked under guidance of Robotics PhD student Ellen Cappo and Professor Nathan Michael



Fundraising Consultant

Choitek

Aug 2016 - May 2017 (10 months)

Contacted 20 potential customer schools for interviewing on product marketing fit

Wrote and edited two grants for robotics startup funding

Lead soldering for Choitek robot circuit boards

Sheet metal bending and assembly for constructing part of robots

Worked at mechanical assembly of two robots through sheet metal design



Mechanical Engineering Intern at CAPS LAB

Carnegie Mellon University's College of Engineering

May 2016 - Aug 2016 (4 months)

Worked under the guidance of Professor Albert Presto

AutoCAD and Excel processing for construction layout and coordinate specification

Constructed air quality sensor tripods

Helped calibrate RAMP sensors for air pollution measurement (CO₂, O₃, CH₄, Water Vapor, NO₂)

Assisted in the experimental setup and machining for the tripods

Deployed tripods in various locations in Pittsburgh



Research Assistant

Carnegie Mellon University School of Computer Science

May 2016 - Aug 2016 (4 months)

Worked under guidance of UPenn Computer Science PhD student John Drake

Created 3D meshes in Blender for PhD student's C++ code to run on

Testing theory of A* search algorithm in shortest path for travel route in Skyrim Elder Scrolls game navmeshes using two or more trails

Successful results with PhD student using my Blender diagrams in his published paper (mentioned in acknowledgments) and for national conference presentation



Independent Researcher- Chemical Engineering

Carnegie Mellon University's College of Engineering

May 2014 - Aug 2014 (4 months)

Worked under guidance of Professor Mariano Martin

Worked on developing a method for a lower amount of greenhouse emissions from incineration plants by using lipid fuels as source of energy

Research on thermal calculations for lipid usage

Successful calculations on using lipids for lowering emissions percentage in incineration plants output

Nominated for Blue Planet Prize for 2014 based on research results



Stock Trader

Apr 2011 - Apr 2014 (3 years 1 month)

Invested in GOOGL and AAPL

Earned paper profits of more than \$10,500

Education



MIT Sloan Executive Education

Graduate certificate, MIT Sloan + CSAIL Artificial Intelligence: Implications for Business Strategy Program

2020 - 2020

With a focus on the organizational implications and potential of robotics, natural language processing, and machine learning . The program focuses on the insight to drive AI integration in businesses

Courses:

Introduction to Artificial Intelligence
Machine Learning in Business
Natural Language Processing in Business
Robotics in Business
Artificial Intelligence in Business and Society
The Future of Artificial Intelligence



Université de Fribourg - Universität Freiburg

Master of Laws - LLM (in progress), Compliance

2020 - 2023

Focus in Compliance

Courses:

Sources and Principles of EU Law
Compliance Systems
Risk Management
Data Privacy
Cybersecurity
Compliance Investigation clinic
Accounting and Internal Control
Sports Contract Law
Artificial intelligence and Blockchain compliance
Environmental Law and compliance
Joint Ventures
Agency and Distributorship
Doing Business in Asia
Doing Business in Africa
Banking and Financial Market Regulations
Corporate Taxation
Customs, Sanctions, and VAT
Anti-corruption and anti-money laundering compliance
Global trade compliance
Product liability
Intellectual property law
Business Ethics
Global Trade Compliance clinic
Corporate Governance
Commodity Trading Arbitration
Human Resources Compliance
Doing Business in the Middle East
Doing Business in Latin America

LLM thesis topic: Comparison between the American and British policy on product liability vs. consumer responsibility for cigarette products

thesis adviser: Geraint Howells



Columbia University

Master of Science - MS (unfinished due to costs), Mechanical Engineering
(Manufacturing)

2019 - 2022

Principles of Innovation and Entrepreneurship (COMS 4460)

Introduction to DevOps (COMS 4995)

Product Design for Manufacturing (MECHE 4604)

Computer Laboratory (MECHE 4400)

Professional Development Leadership for Mechanical Engineering (ENGI 4000) (Data Visualization,
Project Management, Advanced SQL, Life Management, Advanced Ethics, and Human Centered
Design and Innovation)

Masters Projects in Mechanical Engineering (MECHE4998)

Nanoscale Actuation and Sensing (MECHE 6137)

Foundations of Research Computing (Python)

Foundations of Research Computing (R)

Graduate Seminar (MECHE 9500)

Summer Industry Project (ENGI E4700, section 007)

Topics in Signal Processing: Introduction to Blockchain Technology (ELENE 6883, section 001)

Short courses

Intro to structural fire engineering

Laser Materials Processing

Intro to Deep Reinforcement Learning from a Robotics Perspective

Decision Making and Reinforcement Learning

Machine Learning for Functional Genomics

Epidemic Modeling



Carnegie Mellon University

Bachelor of Science - BS

2013 - 2017

Double Major

Minor in Innovation and Entrepreneurship

Relevant coursework:

(49 courses total)

Advanced Mobile Robot Development

Nuclear Robots

Management of Software Development for Technology Executives

Digitools

Energy and the Environment

Air Quality Engineering

Venture Creation

Special Topics: Organizational Theory for Engineers

Statistical Methods

Statistical Reasoning and Practice

Modern Biology Lab
Honors Modern Biology
Supervised Reading (Astrophysics)
Engineering & Public Policy Projects
Materials, Energy, Environment
Entrepreneurship for Scientists and Engineers
Basic Experimental Physics
Phage Genomics Research (2 semesters)

uzh University of Zurich

(Fast Track) Masters to PhD (unfinished due to Covid-19), Informatics

Sep 2020 - 2022

Minor: Information Systems

Certificate: Biomedical Entrepreneurship

Biomedical Entrepreneurship
IT Architectures
Ethics in Cybersecurity
Software Testing
Software Testing Laboratory
Deep Learning for Doctoral Students
Masters Basic Module: Artificial Intelligence Applications
Requirements Engineering
Seminar: Blockchain Programming (Msc)
Informatics I
Software Construction
Advanced Topics in Artificial Intelligence
Digital Tools for Finance
Fixed Income Markets
Fundamentals of People Orientated Computing
Applied Financial Analytics for Strategic Decisions and Value Creation
Matlab for Portfolio Management
Business Informatics I
Introduction to Artificial Intelligence
Social Computing
Web and Mobile Accessibility
Applied Credit Risk Modelling
Software Engineering
Advanced Banking
Foundations of Computing I
Informatics II



ZHdK Zürcher Hochschule der Künste

Bachelors level, Non-degree, Design- Interaction Design

Sep 2021 - Dec 2021

DIG Theorie 1.2 VIAD Inter-Action Design

DIG Narrative Aesthetics, Strategies and Design in Time-Based Media



University of Oxford, Department for Continuing Education

Non-degree, Technology and AI

2021 - 2022

Blockchain for Managers

Agile Project Management



Paralegal College UK

Paralegal Certification

Apr 2021 - Dec 2021

Foundations of Law

Contract Law

Tort Law



Ashworth College

Diploma of Education, Medical Insurance Coding Specialist/Coder



Ashworth College

Associate's certificate, Computer Information Management

Windows Operating System

Website Design

Programming in JavaScript

Local Area Networks

Systems Analysis and Design



University of the People

Master of Science - MS, Information Technology

Aug 2022 - 2024

Algorithms

Databases

Organizational Theory and Behavior



University of Applied Sciences Upper Austria

Master of Science - MS, Energy Informatics

Aug 2022 - 2024

Python

Communication Technology

Processes and Process Modelling

Physics

Systems Engineering I

International Energy Markets

Smart Grid Field Components

IT Security

Software Systems I
International Project Management
Electromobility
Energy Generation, Distribution and Storage

Licenses & Certifications



Certified Scrum Master - Scrum Alliance



Certified AA Developer - Automation Anywhere



Certified UiPath Business Analyst - UiPath



Certified UiPath Solution Architect - UiPath



International Baccalaureate Diploma - International Baccalaureate



Artificial Intelligence: Implications for Business Strategy - MIT Sloan School of Management
25132170



Project Management Certification - eLearning College



CyberSecurity Certification - eLearning College



Inbound Sales Certification - HubSpot Academy
Issued Dec 2020 - Expires Jan 2023



Blockchain for Managers - University of Oxford, Department for Continuing Education



Certified Virtual Assistant - IAP Career College



Certified Freelance Writer - IAP Career College



HR & Recruitment Consultant Diploma with Distinction - John Academy
70981-130475-53525



Certified Life Coach - Udemy



Estate Agent Diploma CPD Accredited with Distinction - John Academy

70981-130013-53525



Certified Medical Coding with Distinction - John Academy

70981-228854-53525



Level 3 Diploma in Pharmacy Technician - John Academy

70981-131200-53525

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Bioentrepreneurship and Innovation Program - University of Zurich



Certified Virtual Assistant - Udemy



Certificate III in Fitness as Personal Trainer - International Fitness Academy



Health Club & Gym Manager Certification - ASFA - American Sports & Fitness Association

Issued Dec 2021 - Expires Dec 2022

98501



Agile Project Management - University of Oxford, Department for Continuing Education



China (Part 1) - The Political and Intellectual Foundations of China



NASM/AFAA CPR - National Academy of Sports Medicine (NASM)

Issued May 2022 - Expires May 2024



CPR & AED - (ISSA) International Sports Sciences Association

Issued Jun 2022 - Expires Jun 2024

3650868



Certified Personal Trainer - (ISSA) International Sports Sciences Association

Issued Jul 2022 - Expires Jul 2024

3650867



Certified Nutritionist - (ISSA) International Sports Sciences Association

Issued Jul 2022 - Expires Jul 2024

3650875



Golf Fitness Specialization (GFS) - National Academy of Sports Medicine (NASM)

Issued Aug 2022 - Expires Aug 2024



Introduction to Screenwriting - University of East Anglia



Introduction to Acting - Luleå University of Technology



Programming 101: An Introduction to Python for Educators - Raspberry Pi Foundation



Video Game Design and Development: Video Game Character Design - Abertay University



Furniture Restoration Certification - International Open Academy

100-304803



Screenwriting - Upskillist

Issued Aug 2022 - Expires Aug 2027

vkcyj4rjpvwjqivn4duvkcj4fgeagoocp



Intermediate in Screenwriting - Upskillist

Issued Sep 2022 - Expires Sep 2027

Skills

Agile & Waterfall Methodologies • Scrum • Business Analysis • Robotics • Environmental Policy • AutoCAD • Python • Java • ANSYS • XML

Honors & Awards



Nominated for CMU Andy Awards (staff at Language Technology Institute): Innovative and Creative Contributions - Carnegie Mellon University

Aug 2017

https://mediaservices.cmu.edu/media/2017+Andy+Awards+Program/1_jy3pu38s (30:15 in video)



CMU High Honor Roll - Carnegie Mellon University

May 2014

Earned GPA of 3.8 for Spring 2014 semester



International Astronomical Search Collaboration- Target Asteroids! - OSIRIS-REx

Dec 2017

1. Asteroid identification and measurement to support research asteroid research and future spacecraft missions to near-Earth asteroids
2. One out of two team members for Pennsylvania

 **Math Quiz fund winner - UNICEF**

Dec 2019

UNICEF funds won through math quiz for disadvantaged children's education (\$517.00 so far)

 **2014 Blue Planet Prize nominee - Dr. Mariano Martin**

Aug 2014

Nominated for research on proving that a certain of mass lipids could be used to thermally power incineration plants

Successful calculations proving research

 **2014 Lindbergh Prize nominee - Dr. Mariano Martin**

Aug 2014

Nominated for research on proving that a certain mass of lipids can be used for thermally powering incineration plants

 **2014 Volvo Prize nominee - Dr. Mariano Martin**

Aug 2014

Nominated for research on proving that a certain mass of lipids can be used for thermally powering incineration plants

 **2014 Environmental Prize nominee - Dr. Mariano Martin**

Aug 2014

Nominated for research on proving that a certain mass of lipids can be used for thermally powering incineration plants

 **2017 CMU Innovation Talks Finalist from Kiefer Robotics - Carnegie Mellon**

University

2017

Discussed robotic design for garbage removal which got me as a finalist

 **2017 CMU IOT Ideathon Finalist from Kiefer Robotics - Carnegie Mellon University**


2017

Discussed research on garbage removing robot for thermal energy project

 **2017 Allegheny County CleanTech 3rd round contestant from Kiefer Robotics - Competition**

2017

Discussed research on creating garbage removing robot for thermal energy power

 **2017 Steinbrenner Environmental Colloquium Poster on use of robotics for energy generation in landfills (only undergraduate)** - Carnegie Mellon University
2017

Presented a poster research of how robotic systems could be used to determine reduce garbage emissions and mass in landfills through mobile incineration systems

 **Junior Euler Society Mathematics Scholar** - University of Zuerich
2013

Received one math award and one cryptography award for competing teams

 **Swiss Mathematics Olympiad qualifying contestant**
2012


Competed over math questions for participating as part of the national team in a foreign language

 **National Society of High School Scholars member** - NSHSS
2010


Member due to high GPA

 **Swiss Informatics Olympiad qualifying contestant**
2014


Participated in programming questions for competition qualifying

 **Tennis athlete** - Bruguera Tennis Academy
2010

2009-2010: Played at Sergi Bruguera Tennis Academy in Spain

 **Tennis athlete** - Nice Tennis Academy
2009

Played competitive tennis in junior group; Gael Monfils and Alize Cornet in same camp

 **Golf athlete** - Tom Burnett Golf Academy
2007

Played competitively with Florida golf academy from 2007-2008

 **Member of the Swiss National Golf Team Region East**
2007

From 2007-2009, where I trained competitive golf with the best in Switzerland in the eastern part of the country

 **UBS Hackathon contestant**
Sep 2018

Main developer for AA Bot contest entry



UBS Hackathon contestant

Jun 2019

Front end developer for platform idea in contest



Professional Development and Leadership Fellow - Columbia University

Jan 2020

Help create new course materials for undergraduate and graduate students based on innovative engineering and scientific topics