MATTHEW BARNARD

(480) 244-3221 – matt@murphysys.com

Visit me at www.murphysys.com to see some of my projects

Software Skills

NX	(1 year)	C#	(20 years)	Mathematica	(4 years)
Solidworks	(CSWP-Mechanical Design)	Python	(10 years)	Git	
C++	(15 years)	Javascript	(10 years)	LaTeX	
Java	(10 years)	MATLAB	(4 years)	Word/Excel/PPT	

Education

ARIZONA STATE UNIVERSITY, Tempe, AZ

Bachelor of Science, Mechanical Engineering   2021 – 2023 *(planned)*

MARICOPA COMMUNITY COLLEGES, AZ

Engineering Undergraduate Transfer Program   2020 – 2021

- Phi Theta Kappa Honor Society, Omicron Beta Chapter

ARIZONA STATE UNIVERSITY, Tempe, AZ

Master of Science, Electrical Engineering *(Incomplete)*   2013 – 2015

- Patent granted: US10291696B2 *Peer-to-peer architecture for processing big data*
- IEEE Publications: 53rd Annual Allerton Conference on Communication, Control, and Computing
    - *Decentralized scheduling with data locality for data-parallel computation on peer-to-peer networks*
    - *Architecture and implementation of an information-centric device-to-device network*

Bachelor of Science, Biology   2010 – 2013

- International Union for the Study of Social Insects — 2012 Meeting, Greensboro NC
    - Travel Grant: U.S. Army Research Office
    - Won: Best Undergraduate Poster
- Animal Behavior Society — 49th Annual Meeting, Albuquerque NM
    - Nominated: Best Undergraduate Poster

SOUTH MOUNTAIN COMMUNITY COLLEGE, Phoenix, AZ

Associate of Science with High Distinction,

Associate of Arts with High Distinction   2008 – 2010

- President's List
- Research grants: *Evolutionary Computer Graphics* and *Teaching Physics with Computer Games*
- In-class teaching assistant/tutor for grade 5 math

Work Experience

Lead Engineer Associate – Honeywell Aerospace, Glendale, AZ   Dec 2022 – April 2023

- Operated CNC machines to manufacture parts in a variety of materials.
- Programmed CNC machines using NX CAM.
- Designed and 3D printed tooling for satellite launch vehicle systems.
- Performed FEA in NX to determine critical modes for parts being turned.

Director of Operations – Evolution Motorsports, Phoenix, AZ   2016 – Present*

We're a two- to four-person operation selling custom and third-party aftermarket performance parts in the Porsche, VW, Audi, McLaren, Maserati, Mercedes, Lamborghini, and Ferrari markets. We ran a shop in Arizona until late 2019 where we built high-power street and race cars primarily in the Porsche, McLaren, and Audi markets; it's since been relocated to Washington.

*Since 2019 I no longer have an active role, but I continue to work with my partners on a consultation basis.

- Managed vendor relations, ordering, and manufacturing to fulfill $80,000 in average monthly sales.
- Responsible for bringing new products to market including rapid prototyping, design for manufacturing, manufacturer relations, process optimization, and developing marketing material.
- Responsible for process in sales, purchasing, manufacturing, warehousing, and shipping.
- Responsible for office, warehouse, and shop facilities, maintaining shop equipment, and safety.
- Trained new office employees; trained and managed shop intern.
- Designed and fabricated one-off metal parts for street and race cars (Porsche, McLaren).
- Designed and built electronic fuel control system for record-setting power in a modern Porsche street car.
- Modified, diagnosed, and repaired street and race cars.
- Assisted with phone and internet sales and customer service.
- Designed and prototyped sheet, tube, and cast metal parts for partners in off-road aftermarket.

Graduate Researcher – Arizona State University   2013 – 2015

Lab of Dr. Lei Ying:
- Originated mobile ad-hoc content-centric network with novel network protocol; developed clients for Windows, Linux, Android, and the NS3 simulation environment.
- Designed and developed distributed database and peer-to-peer processing platform to implement a peer's novel scheduling algorithm (patented work).
- Designed and developed network framework for a peer's implementation of a novel privacy scheme.
- Developed social network web scraper with graph analysis and visualization tools for peers in Machine Learning.
- Developed consolidation tools for in-house research data and maintained lab code library and standards.

Staff Researcher – Arizona State University   2010 – 2014

Lab of Dr. Jennifer Fewell
- Led multi-year behavioral and genomic study in California and Arizona.
- Worked in multidisciplinary teams of two to fifteen on behavior and genomic experiments.
- Engaged in STEM outreach and education in field site communities and with K-12 students.
- Prototyped data collection, analysis, and reporting software for animal behavior experiments.
- Developed automated image analysis tools looking at insect colony growth and DNA sequence gels.

Lab of Dr. Jon Harrison

- Maintained populations of genetic mutant fruit flies for use in post-doctoral research.
- Developed motion-quantizing tools for analyzing animal behavior videos.
- Provided experimental and technical support to small teams of researchers.

Barista – Starbucks, Phoenix, AZ   2010 – 2012
Warehouse Supervisor – Goodwill Industries, Corvallis, OR   2009 – 2010
Service Tech – Best Buy Geek Squad, Phoenix, AZ   2006 – 2007

Volunteerism

Postoperative Care – Mission of Mercy, Phoenix, AZ   2016 – Present
Science Education – Arizona Wilderness Coalition   2016