

JONATHAN MACK

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SUMMARY

4000+ hour commercial helicopter pilot, with academic degrees and professional experience in both aerospace engineering and computer science, and first author of a research paper published in a leading astrophysical journal.

WORK EXPERIENCE

Helicopter Pilot

2009 - Present

Air Methods

Various Locations

- Pilot a helicopter to transport sick and injured patients from accident scenes and outlying hospitals to major hospitals.
- Act as the base Field Safety Representative.
- Created and maintained a database of 200+ helicopter landing zones, addressing a customer safety need.
- Created and maintained a spreadsheet that determined helicopter crewmember night vision goggle currency, adopted by multiple bases.

Software Engineering Intern

2008

Strictly Business Computer Systems

Huntington, WV

- Designed and implemented a configurable database manipulation application for a large corporate client, using agile test-driven development methods.

Graduate Assistant

2006 - 2008

West Virginia University

Morgantown, WV

- Developed lessons, instructed students, and designed, edited, and graded homework and exams for WVU's Introduction to Computer Applications (Microsoft Word, PowerPoint, Excel, and Access).

Helicopter Pilot

1998 - 2005

Various Employers

Various Locations

- Acted as a helicopter pilot, providing tour, emergency transport, traffic watch, powerline patrol, and flight instruction services.

Aeronautical Engineer

1998 - 2000

Robinson Helicopter Company

Torrance, CA

- Worked in the areas of certification, design, flight test, and weight & balance to optimize existing helicopter designs (the R22 and R44).
- Was involved in the initial phases of designing a new helicopter (the R66).

RESEARCH EXPERIENCE

Independent Researcher

2016 - 2025

- First author of a research paper, published in a leading astrophysics journal, analyzing the multiple galaxy merger fraction of a universe simulation. Designed, wrote, and validated the associated computer code, analyzed the results, and wrote the early drafts of the paper.

Graduate Research Assistant**2006 - 2008***West Virginia University**Morgantown, WV*

- Assisted a WVU Computer Science faculty member in research and report composition in a NASA-funded research project investigating software validation of spacecraft real-time operating systems.

EDUCATION**Master of Science Computer Science****2008***West Virginia University**Morgantown, WV*

Problem Report: Test-driven development of a performance-critical database record-tree balancing application.

Bachelor of Science Aerospace Engineering**1998***West Virginia University**Morgantown, WV*

Graduated cum laude

PUBLICATIONS

Mack, J., and Genel, S. On the Frequency of Multiple Galaxy Mergers in Λ CDM Cosmological Simulations. 2025, The Astrophysical Journal, 995, 110, doi: <https://doi.org/10.3847/1538-4357/ae10b6>

PROGRAMMING-RELATED

Applications/Languages/Specifications: Android, C, CSS, Fortran 77, HTML, Java (dom4j, JUnit, log4j), JavaScript, Linux, Microsoft Office (Word, Excel, PowerPoint, Access), MySQL, Oracle Database, PHP, Python, UML, Windows
Completed code projects at <https://github.com/jonmack3>

AVIATION QUALIFICATIONS

- US FAA Airline Transport Pilot-Helicopter, Certificated Flight Instructor: Rotorcraft-Helicopter/Instrument Helicopter, Private Pilot-Airplane Single Engine Land, Remote Pilot-Small Unmanned Aircraft System
- Transport Canada Commercial Pilot License - Helicopter (Endorsements: RH22, RH44, BH06, EC30, EC35, EC45), Instrument Rating Group 4

Flight times

Totals		By operation type		By model	
Total	4600	Cross-Country	1600	H145	15
Helicopter	4500	Mountain (Helicopter)	1400	H135	1600
Helicopter PIC	4400	Night	900	H130	400
Helicopter Turbine	3000	NVG	700	H125	300
Airplane Single Engine Land	100	Instrument-Simulated	90	B206	500
		Instrument-Actual	3	R44	50
				R22	1400

Keywords: Airbus, BS, Bell, CS, Cessna, College, Degree, MS, Piper