Craig Warner

Education:

Ph. D., August 2004
Major in Astronomy, minor in CISE
University of Florida, Gainesville, FL
Master of Science, December 2002 Major in Astronomy, Minor in CISE
University of Florida, Gainesville, FL
Bachelor of Science, May 1999
Double Major in Astronomy and Physics
University of Florida, Gainesville, FL

Professional Experience:

2004-present **Software Engineer,** University of Florida, Department of Astronomy

- Extensive experience in designing data pipeline software and designing and integrating software control systems for world class astronomical instruments.
- Designed the FATBOY data pipeline software for the FLAMINGOS-2 instrument and extended it to be broadly compatible with many infrared and optical instruments including NEWFIRM and MMT-Pol.
- Experience with GPU programming and developing parallel algorithms for data processing using CUDA and PyCUDA.
- Lead software engineer for the mechanism control system and data reduction pipeline for MIRADAS, a near-infrared cross-dispersed spectrograph being built for the Gran Telescopio Canarias.
- Designed the complete Java-based software control suite and Python-based data reduction system for the MMT-Pol instrument, a 1-5 μm imaging polarimeter at the MMT Observatory. The control suite includes Java agents to command and monitor the detector, motors, and temperature controller via TCP sockets, a GUI to interface with these agents, and a quick-look display tool.
- Lead software engineer on the Flamingos-2 near infrared wide field imager and multi-object spectrometer at Gemini South. Helped design low-level agents written in C++ to communicate with devices and motors via serial port, an EPICS portable channel access server (PCASI) which communicates with the agents via TCP sockets, and high level Python scripts and Java-based GUIs for observers.
- Assisted with software development for the control software of CanariCam and CIRCE at the Gran Telescopio Canarias.
- Experience in web programming, including PHP, HTML, and Javascript, and Relational Database Management Systems (RDBMSs) to facilitate access to large data sets.
- In a side project with UF IFAS, implemented a model-based automatic irrigation system via the web that can be deployed with local units consisting of a PLC, a raspberry pi, a weather station, and a cellular modem/router.

1999-2004 **Research and Teaching Assistant,** University of Florida

- Performed research on heavy element abundances and chemical evolution in quasars and spectral line diagnostics of astrophysical environments.

- Designed software to perform research using the IDL language.
- First author on four papers published in the *Astrophysical Journal*

1996-1999 **Research Assistant,** Clemson University

Publications (selected):

- "Redefining the Data Pipeline Using GPUs," C. Warner, S. S. Eikenberry, A. Gonzalez, & C. Packham. 2013, ASPC, 475, 79.
- "GPUs and Python: A Recipe for Lightning-Fast Data Pipelines", C. Warner, C. Packham, S. S. Eikenberry, & A. Gonzalez, 2012, ASPC, 461, 53.