INTERN

The Commonwealth Center for Advanced Manufacturing (CCAM), located in Prince George County, Virginia, is positioned to be a leader in the accelerated development of production ready solutions in the technology focus areas of adaptive automation systems, surface engineering, additive manufacturing, and machining technologies. CCAM's industrial and academic members focus on developing innovative and valuable technologies that improve quality, productivity, products, and profits.

The CCAM Intern Program runs concurrently with the semester schedule of most universities. Openings will be available for a minimum of 12-14 week term at CCAM's research center during fall, spring or summer academic semesters. Currently, CCAM only accepts applicants either attending or recently graduated from CCAM's member universities.

POSITION DESCRIPTION/RESPONSIBILITIES

CCAM is seeking multiple undergraduate and graduate student interns to perform and participate in the research programs of their world-class applied research facility. The interns will support CCAM's research programs, helping to ensure that they are delivered on time and on budget to a high standard of quality. Primary responsibilities may include supporting scientists, engineers, and technicians with ongoing research in CCAM's technology focus areas; developing systems to manage equipment, facilities, knowledge, specimens, and other resources; supporting the pursuit of additional research and development opportunities; and supporting CCAM infrastructure projects.

Examples of work performed by interns include the following:

- Computer vision and augmented reality
- Design and build of test equipment
- Modeling and simulation of manufacturing processes and equipment
- Selection, installation, and data acquisition from instrumentation and sensors
- Manufacturing process work, including surface preparation and coating application pertaining to plasma spray and other processes; additive manufacturing; machining; etc.

CANDIDATE QUALIFICATIONS

The Commonwealth Center for Advanced Manufacturing is looking for interns who are intrigued by its mission and who desire to make contributions to programs and teams focused on high-technology manufacturing activities and high-value manufacturing systems. This will require the interns to have:

- A genuine enthusiasm for the development and application of scientific principles, engineering methods, and technology to manufacturing in industry
- The ability to quickly grasp key concepts needed to attack difficult engineering and manufacturing problems
- A positive, team-first attitude
- The ability to work independently towards an established goal without continuous oversight or assistance

At a minimum, the candidate must have partially completed a scientific or engineering degree (at least two years of academic credit) at an accredited university. Applicants must be a student or recent graduate of a CCAM member university.

Interns focus in one or more of the following research disciplines:

- **Computer Vision and Visualization**

  - Degree program or area of focus: computer science, programming, or engineering; computer or machine vision; machine learning; modeling & simulation; or similar programs
  - Useful skills and experience include programming with the following: C++, OpenCV, CMake, SIFT, SURF, ORB, BRIEF, segmentation, stereo vision, PTAM, pose estimation, 3D Mapping, Qt, android, VTK, OpenGL, CUDA

- **Manufacturing**

  - Degree program or area of focus: manufacturing engineering; industrial engineering; mechanical engineering; systems engineering; or similar programs
  - Useful skills and experience include CAD; CAM; familiarity with manufacturing processes and equipment; robotics/automation

- **Instrumentation & Controls**

  - Degree program or area of focus: instrumentation; controls; electrical engineering; mechanical engineering; mechatronics; or similar programs
  - Useful skills and experience include programming in LabVIEW, C++, Arduino; data acquisition; analog sensor wiring and installation; digital logic design; industrial circuitry to include electrical safety design and build; automated system programming and implementation

- **Materials**

  - Degree program or area of focus: materials science and engineering, metallurgy, ceramics, chemical engineering, mechanical engineering or similar programs

  - Essential to have exceptional skill in metallography, specimen preparation, and mechanical testing. Requires above average experience in microstructural analysis using both optical and scanning electron microscopies. Additional useful skills include a practical knowledge of material manufacturing processes including machining, coating, welding, and joining; knowledge of powder metallurgy, including the ability to learn advanced surface characterization methods; and an understanding of laser fundamentals, heat transfer, computational modeling and physics of materials.

APPLICATION

To apply, send a cover letter and resume to myinternship@ccam-va.com. The applicant must select one of the four research disciplines described above: programming, manufacturing, instrumentation & controls, or materials. For further information, please visit the CCAM website at http://www.ccam-va.com/.

The Commonwealth Center for Advanced Manufacturing is an Equal Opportunity Employer.