



June 21, 2010

Role: Vision Scientist I

Location: 2d3 Incorporated Headquarters, Irvine, California

The Company

Since 1999, 2d3 has supplied a range of computer vision products, all based on '3D from the moving image', mainly to the film and television production industries. The company's primary product, Boujou, the world's leading automatic camera tracker, is now used by most film and video post-production companies to generate visual effects requiring accurate registration of real and virtual images.

In 2006, 2d3 expanded its efforts into the aerial imaging market. The group has developed a set of technologies covering a wide range of real-time and off-line computer vision capabilities for processing of aerial motion imagery, including its flagship product, TacitView.

2d3 is part of OMG plc, a company with a 25 year history of developing, manufacturing, and selling products for 3-dimensional tracking in medical, industrial, government, and defense markets. OMG exports over 80% of its sales with customers in over 50 countries. Since 2001, OMG has been listed on the London Stock Exchange and today employs more than 200 people in UK and US.

The successful candidate will join a team with incredible experience and help us win projects and sell product covering automatic object recognition, vision hybrid navigation and targeting, tracking and collision avoidance, and terrain and urban modeling. Yeah, really cool stuff.

The Job

The new appointee will be a computer vision scientist with relevant research experience, gained in academic, public sector, or commercial environments, to at least post graduate level. He or she will join a team with similar experience and act as technical lead on one or more projects covering augmented reality, real time structure from motion, automatic object recognition, vision hybrid navigation and targeting, tracking and collision avoidance, and terrain and urban modelling.

2d3 uses Matlab for prototyping but the majority of 2d3's extensive internal computer vision libraries are implemented in speed-optimised, multi-threaded C++. Windows or Linux environments are used according to project and customer requirements.

- The key areas of R&D for 2d3 include, but are not limited to:
- Image-based tracking (stabilization, SFM, SLAM, multi-sensor systems, etc)
- Object detection, recognition, & classification (with/without tracking, single/multi-view)
- Automatic mosaicing (using a range of matching methods)
- Photometric optimisation & matching
- Camera calibration & image rectification
- Novel view synthesis
- Super-resolution & compression artefact reduction



t. +1.949.540.0740
f. +1.888.828.3379

101 Academy Way, Ste 100
Irvine, CA, USA
92617



t. +44.1865.811.060
f. +44.1865.240.527

14 Minns Business Park
West Way, Oxford, UK
OX2 0JB

- Hyperspectral image fusion
- Terrain & townscape 3D modelling

2d3 has close working relationships and a number of active collaborative projects with leading academic computer vision groups in UK, Europe, and US. Members of the company regularly attend and present at the major international computer vision conferences. Within the constraints of commercial and national security, 2d3 encourages the publication of peer-reviewed or invited papers and presentations.

In addition, if you have the following key skills, they will set you apart from other candidates:

- Programming Languages, Protocols, Formats
 - C and C++
 - OpenGL
 - .NET
 - XML
 - SQL, Oracle or other DB experience
- Methodologies
 - AGILE, specifically SCRUM
- Tools
 - SVN
 - Boost
 - IPP
 - AGI's Insight 3D
 - Sensing Systems' Tungsten

In addition to your skills, you will also be **required** to satisfy the following **minimum** requirements:

- US Citizen (you may need to get a clearance at some point)
- Fluency in English, both written and spoken
- Baccalaureate degree - Computer Science, Electrical Engineering, or Mechanical Engineering with direct experience in applied Computer Vision techniques
- 5 years of full time, professional software development and engineering experience
- Must have been published in a generally accepted academic trade publication for novel application of vision science theory to a real world problem.
- Expert knowledge of Microsoft Office applications, specifically Word and Excel
- Already reside near or be willing to relocate to Orange County, California
- Be willing to travel up to 40% of the time for field trials, trade events, and other company facilities
- Understand the differences and commonalities of 'internal' and 'external' customers
- Excellent analytic problem solving and critical thinking skills



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Finally, some candidates will have the all of the skills and satisfy all of the requirements listed above. The one who gets the job will be determined by the following qualities:

- A 'can do' attitude coupled with a history of finding solutions to problems – not just finding the problems. Finding problems is easy, what we do is hard – solving problems. This is why we succeed.. If you are someone that says 'I think I can solve that', and looks for ways around barriers, then you might be our candidate.
- A technical ability to understand and demonstrate 2d3's core technology, and find innovative ways to implement it.
- In order to successfully solve problems, you need to be empathetic. You need to be able to put yourself into the customer's shoes and envision how your solution can solve their problem.

If you can honestly say that you have these criteria, we want to talk to you.

How to apply

Send a resume and cover letter to careers@2d3.com .

In your cover letter, please highlight why you think you can satisfy the needs of our organization.

PRINCIPALS ONLY (This means no recruiters please)

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