



Role Profile: Principal Software Engineer

Vacancy Description

Amiosec is an exciting and growing UK technology company with innovation, agility and state of the art technology at its core. We work in partnerships with UK government customers and commercial providers to deliver research, technology and products in the communications security sector.

We are looking for highly competent software engineers to join our team and help deliver our growing portfolio. Responsibilities include conception, design, development, coding, testing and debugging of complex software solutions on a variety of COTS and bespoke hardware platforms hosting both mainstream operating systems and secure microkernels. Due to the nature of our work, all candidates may be required to obtain and maintain an appropriate UK security clearance.

Typical Activities

Subject Area	Activities
Application Design & Development	<ul style="list-style-type: none"> Design and implementation of robust embedded and user-facing software applications in line with the technical competencies listed below.
Driver & Middleware Development	<ul style="list-style-type: none"> Development/modification of board support packages and drivers for hardware devices, filesystems, etc.
Technology Research	<ul style="list-style-type: none"> Evaluating latest technologies (e.g. hardware processors, languages, operating systems).
Tool Evaluation	<ul style="list-style-type: none"> Investigation of emerging frameworks (e.g. test, automation), libraries, build tools etc.
Planning and Estimation	<ul style="list-style-type: none"> Task breakdown, sizing, progress reporting; Development/contribution to technical proposals.
Team Activities	<ul style="list-style-type: none"> Involvement in Agile Scrum ceremonies and design sessions.



The sections below outline typical responsibilities and competencies that we are looking for. These are wide ranging and represent the full cross section of capabilities that we seek. Prospective candidates should be able to demonstrate ability in a number of the technical competencies (depending on grade/experience) and as a minimum, satisfy the core competencies as listed.

Technical Competencies

Subject Area	Competency
Programming Languages (Primary)	<ul style="list-style-type: none"> Real-time C/C++.
Programming Languages (Secondary)	<ul style="list-style-type: none"> User interface design/development (e.g. C#/.NET, QT); Web based application development.
Scripting Languages	<ul style="list-style-type: none"> Python, Bash, etc.
Software Quality & Testing	<ul style="list-style-type: none"> Unit and system testing frameworks (e.g. Google Test, Unity, Robot, OpenHTF, etc); Fuzzing (e.g. AFL); Static/Dynamic Analysis tools (e.g. Coverity, PRQA, Lint);
Architectures & Build Systems	<ul style="list-style-type: none"> Understanding of both kernel and user space application development aspects; Build systems (yocto/buildroot, GNU make etc).
Development Targets	<ul style="list-style-type: none"> Embedded operating systems – including real-time aspects and resource constrained environments; Desktop operating systems - Linux (primary), Windows (secondary); Secure microkernels; Smart phones (iOS, Android).
Networks and Protocols	<ul style="list-style-type: none"> Network communications protocols (TCP/IP, ARP, etc); Network analysis and debugging tools (e.g. WireShark, TCPDump).
Communications Security	<ul style="list-style-type: none"> Understanding of cryptography and cryptographic algorithms; Secure application design and defensive programming.
Development Tools	<ul style="list-style-type: none"> Requirements management; Design capture (UML, etc); Source control (including workflows - Git).



Core Competencies

Subject Area	Competency
Approach	<ul style="list-style-type: none"> • Enthusiasm for technology and desire to understand it, work with it and develop innovative solutions.
Working Style	<ul style="list-style-type: none"> • Ability to work individually or as a member of a multi-discipline team; • Self-motivated; • Ability to capture and articulate requirements and design ideas; • Willingness to be flexible and embrace new technologies/techniques; • Good time management skills, ownership of own deliverables; • Tenacious problem solving skills.
Customer Focus	<ul style="list-style-type: none"> • Excellent communication skills (including generation of written content); • Ability to investigate and understand customer needs.
Innovation	<ul style="list-style-type: none"> • Ability to foster and develop innovative ideas; • Lead/contribute to improvements in products and ways of working.

