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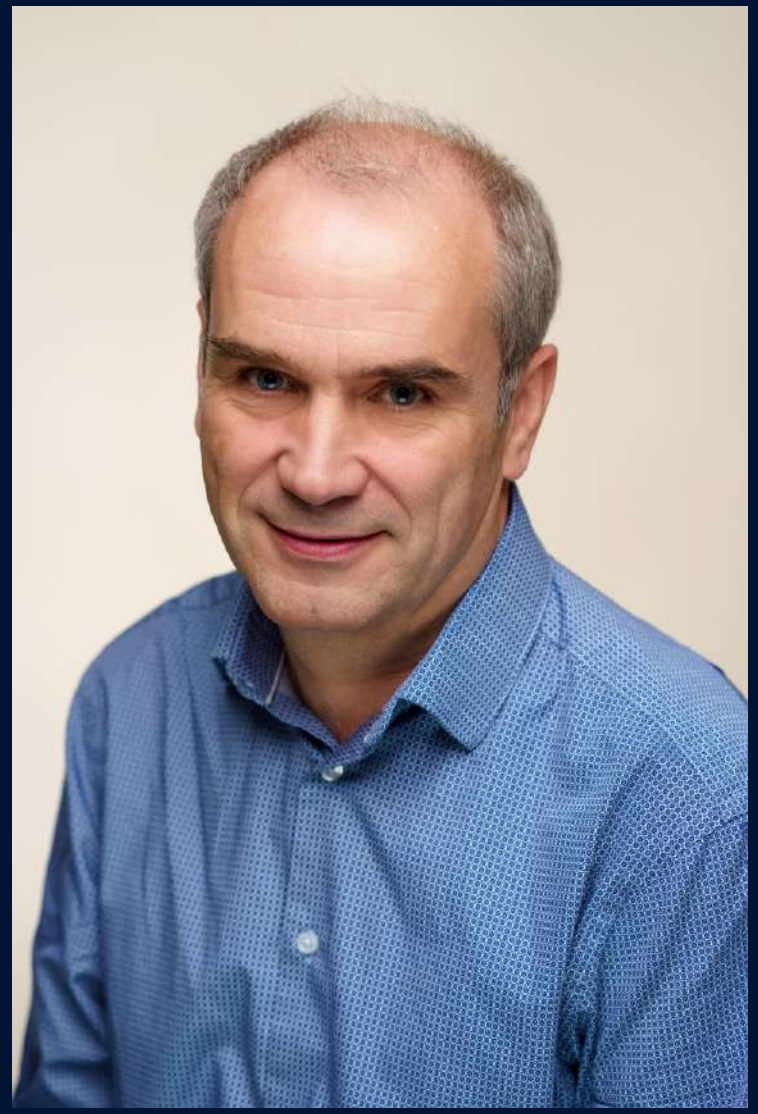
Graduate Programme 2021



Welcome

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Graham Curren, Founder and CEO

It is a great pleasure to introduce our 2021 Graduate Training Programme. Our success as a company is built upon the quality and commitment of our people. After all, high performance engineering starts with high calibre engineers. We welcome applications from those who share our passion for working at the leading edge of technology, continually pushing our industry forward and setting new benchmarks in what is achievable.

The graduate programme is part of our ongoing commitment to encourage and nurture talent and to facilitate fulfilling careers in IC engineering. We sincerely hope you are inspired to join us and be part of our vibrant global culture.

There are great opportunities for professional development within Sondrel for those that take on board our values of working in partnership with each other, with our clients and our industry partners.

CONTENTS

Shaping the Future

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UK | USA | CHINA | FRANCE | GERMANY | ISRAEL | MOROCCO | INDIA

READING | BRISTOL | KINGS LANGLEY | SAN JOSE | SHANGHAI | XI'AN | SOPHIA ANTIPOLIS | PARIS | STUTTGART | TEL AVIV | RABAT | HYDERABAD

Sondrel is known for delivering highly complex silicon designs. Our designs have appeared in hundreds of leading-edge products including those of market leaders in mobile phones, cameras, security systems, AR/VR systems, network servers, gaming consoles & many more.

Founded in 2002 as a specialist integrated circuit design consultancy, we now also offer a turnkey service from system design to the supply of production silicon. Clients bring their ideas or early stage prototypes to us to architect a solution and support them all the way through to the delivery of fully packaged chips ready for insertion into products.

Our clients engage with us to create power efficient, highly performant System on Chip (SoC) developments. Our success is based on working in partnership to deliver on our clients' requirements using our knowledge of how to get the most out of silicon and get it to market reliably, on time and at the right price.

We regularly serve the world's leading technology brands working on the absolute cutting edge of our industry, frequently completing designs on process nodes at 7nm and below. We work across a range of end markets on applications that typically require complex digital design. We collaborate with industry partners to set new benchmarks in SoC design.

DOMAIN EXPERTISE

- Video Processing
- IoT
- Video Analytics
- Automotive
- Machine Learning
- AR/VR
- Blockchain
- Artificial Intelligence
- Networking

KEY FACTS

- 100s of designs to 7nm
- Working on designs at 5nm
- UK headquartered
- 12 offices worldwide
- Founded in 2002
- Specialist IC design consultancy & Silicon Service Provider
- Samsung, Arm & TSMC partners
- Multi-award winning

Your Opportunity

Ed Loverseed, Head of Engineering

Sondrel's graduate programme provides the opportunity to get involved in chip development from the outset. What is more, there is guaranteed exposure to a wide range of disciplines and application areas and the chance to learn from some of the brightest people in the industry.

The type and variety of work here is unparalleled. The breadth and depth of our work is what gives us architectural authority and the skill of dealing capably with the unexpected twists that occur when your work is constantly breaking new ground.

> *"Learn from some of the brightest people in the industry."*

Small design service houses tend to specialise in one area, be it RTL design, verification, DFT, software or physical implementation, but Sondrel has the scale to tackle every discipline, which means working in large multi-disciplinary teams in which your accumulated knowledge about the design is essential to the project as a whole.

At a fabless semiconductor company one tends to iterate products (or product families) so implementation moves on but the application space is the same. At Sondrel we work on designs from a wide range of industry sectors – from automotive to IoT, networking to UHD video cameras.

At an IP company it is rare to see designs all the way through to production in volume – the customers do that. At Sondrel by contrast, we take designs all the way from inception to volume silicon. This means we can relate the work we do to specific products on the market.

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Programme Overview

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There are two routes into our programme: one geared towards IC hardware engineering and one focused on embedded software.

The core of the Graduate Programme is the same for everyone and is designed to immerse you into business life so you can contribute to all aspects of our work culture and develop as an employee with business skills as well as vocational engineering skills.

Both routes include a mixture of five day courses on site and off site, plus online or self-taught courses that you take with support from your mentor. These learning modules expose you to all aspects of the work in your chosen route so that you can find out what you are particularly good at and enjoy.

HARDWARE ROUTE

SOFTWARE ROUTE

Turn over *to find out about the core components that all graduate trainees get to take part in*

Core Components

Even though you may be working at different sites, everyone on the Graduate Programme comes together regularly for soft skills courses, outings, dinners and other activities.

- Funded external training courses
- Mentoring and structured feedback
- Take part in our monthly social activities
- Option to be published in our global staff magazine
- Placements in different disciplines or areas
- Work on live client projects
- Hands on Training
- International travel to meet other Sondrel teams
- Attend Industry Conferences & Expos
- Dinner with our CEO and executive team
- Team building away days
- Get Involved in our internal "Tech talks"

Hardware Route

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During Year 1 you will spend time completing placements and gaining experience and understanding in four core areas of the IC development process as shown below.

Year 2 will start with you completing a two month placement in a specialist area of your choice (for example Software, Programme Management, BizDev, Architecture). You will then move on to live customer engagements, utilising the skills and experience that you have already developed on the programme.

FRONT END DESIGN

Learning to convert detailed micro-architectures into high quality RTL designs

Formal training in Digital Design Techniques and Comprehensive Verilog

Learning to use industry standard tools and flows (Simulation, Lint, CDC, Synthesis)

VERIFICATION

Learning to carry out verification according to detailed verification strategies and plans

Use of advanced techniques (portable stimulus, SystemVerilog, UVM, coverage collection / analysis)

Experience working at various design levels (IP, Subsystem, SoC)

Formal training covering Comprehensive SystemVerilog

DESIGN FOR TEST

Learn what it takes to architect and implement DFT on a modern SoC design

Placement will cover Test Mode Controllers, Scan, Boundary Scan, Memory BIST, testing of analogue macros, characterisation

Learn to use various tools from industry standard suppliers

PHYSICAL DESIGN

Learning how to take an RTL design and create a physical implementation of the design

Internal training covering Logic Synthesis, Floor Planning, Placement, Clock Tree Synthesis, Routing and STA

Learn how to use a set of industry standard layout tools, with the Sondrel flow

Embedded Software Route

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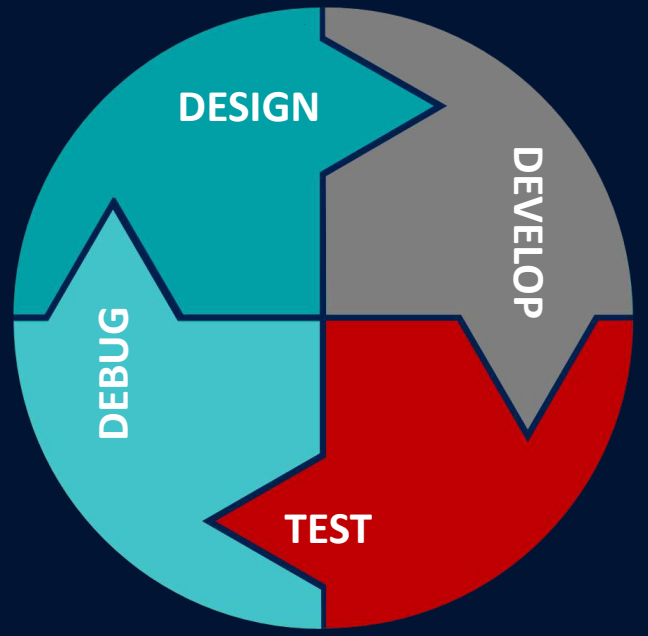
Year 1 of the Embedded Software Route includes two important five day, off-site training courses. From the start you will be working on live projects alongside engineers in a number of different placements. This provides a chance to shadow, learn and contribute through all four aspects of the development process; design, development, testing and debugging. As your skills develop you will be able to tackle increasingly difficult and varied engineering problems, always being able to rely on the combined experience of the team when you need it. In Year 2, training and project work continues with more autonomy.



5 Day Training courses:
- C for Real-Time Embedded Developers
- Developing Embedded Linux Drivers

Further training courses that are self-taught with support

Embedded C, Linux, Bash, Python, Git

+

Live demo projects
Use recent silicon to produce interesting demos that we can show at industry events or turn into videos for our website.

+

Hackathons
Develop material for hackathon days to challenge the next year's prospective intake. You'll interact with new applicants to help us select the best.

> *"As a team, we are constantly working in different parts of the full software lifecycle. Get involved and make a difference."*

Meet the Team

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Ben Fletcher

Director of Engineering

Graduate Programme Director

Leads the graduate programme, making sure the graduates get the most out of the programme and go onto enjoy successful careers within Sondrel.

James Gatt

Director of Software Engineering

Graduate Programme Director

Mentors the graduates on the programme. Determines how the programme should evolve to stay relevant in the future. Responsible for the contents of the programme's embedded software route.

Judy Ilett

Global Talent Acquisition Specialist

Graduate Programme Recruiter

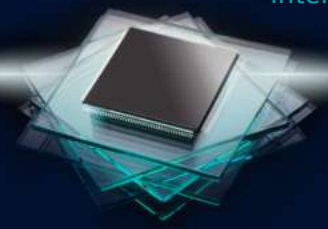
Recruits talented graduates who have a passion for engineering. Coordinates the application process by reviewing CVs and shortlisting. Offers guidance throughout the interview process.

Ed Loverseed

Head of Engineering

Graduate Programme Executive Sponsor

Makes sure the Sondrel leadership team has visibility of the great contribution our graduates are going to make to the company.



Hardware Route – Leading the Way

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Ben Fletcher
Director of Engineering

I have been lucky enough to have been working in the semiconductor business for around twenty thoroughly enjoyable years. This industry is constantly evolving, which means the work we do is continuously changing. It is always stimulating and thought provoking, which provides plenty of scope to continue developing my existing skills and learn new ones.

During this last year we also had to overcome the challenges presented by the pandemic. It has made me very proud to be part of a team which has proved itself extremely adaptable and supportive during this period, and even prouder that we have continued to deliver the great results that ultimately help to shape the future, with products that change our everyday lives.

Most of my career has been in the audio, video and AI spaces, and I recently gained an MPhil in Machine Vision.

Sondrel is large enough to be significant globally but small enough so that you can have a real impact in your core technology role and in the wider contribution you make to the business.

I'm extremely excited to be leading the Sondrel Graduate Programme into its second year, and look forward to welcoming the next set of candidates to join the programme in 2021.

"I get to work with other people who love technology and work with me to solve complex and challenging problems."

"The successful graduates selected for the G2020 programme (Matt, Ryan, Alasdair, Charlie, and Liam) attending their socially distanced familiarisation day ahead of joining us in September."

The Software Route – Leading the way

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James Gatt,
Director of Software Engineering

Great chips need great software! I work with an expert team of talented and creative software engineers. Unlike many other industries, we participate in much more of the chip design lifecycle than just writing software. Working at a chip design company means you can actually influence the features and behaviour of the hardware that is put into the chip, right from the very first boot operations to details that make it optimal for running a fully-featured OS such as Linux.

We develop code before it gets to silicon using platforms such as C simulators, FPGAs, and emulators, and of course we are the first to receive the brand-new silicon and encourage it to burst into life! It doesn't stop there; we provide comprehensive board support packages which can include drivers for Linux, any RTOS, or bare metal, and we get them tested and working on the real chips.

Working on the hardware / software boundary is challenging, when something doesn't work it could be caused by the software, the chip (or the simulation model of it), the PCB, or anything connected to them. This makes the work exciting as you are constantly learning and thinking hard about your assumptions in order to solve tricky problems - it takes a tenacious and detail focused personality to succeed in this work; we are a team who have a passion for the work we are doing.

> *"We are the first to receive the brand new silicon and encourage it to burst into life!"*

From Graduate to Engineer – Dan Li

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When I graduated in Electronic Engineering, I was keen to work on hi-tech projects but also wanted to travel. Sondrel is an international company where you get to work with people from many countries all the time, both in the same office and remotely. I like that I can learn different ways to solve problems by being in a multi-cultural environment. I also really like the variety of work at Sondrel and the chance to work with big name companies and on advanced technology such as 7nm processes. Because of this I can learn different flows and tools and challenge myself every day to do the best I can, which is really rewarding and fun.

After I joined Sondrel, I got three months training in China Ningbo Nottingham University. I learned basic concepts of physical design which laid a good foundation for my future work. We also had training on how to use tools more efficiently and how to use the updated tool functions. The course included soft skills workshops such as project management training, interview techniques etc. which were very interesting. When I joined the Sondrel Shanghai office, my English was not very good, I could communicate with colleagues from other countries but not in a professional way. I was very pleased when English teachers came to our office every month to help improve my formal English-speaking skills.

I was very pleased to have the opportunity to move to the UK with Sondrel. When I studied here I loved this country very much – full of history, quiet and peaceful compared to busy city life at home, and with countryside views everywhere. In the UK people are friendly and not always under pressure. It is multi-cultural so you feel that other countries are not far away.

Now I am really improving my English. Although I got my MSc here, my English was not good enough to talk about culture or news or to give a good presentation to my colleagues. Since joining Sondrel I made lots of friends. Our colleagues are very nice and chatty and very patient and they ask me tell them about my own country. Last month I even gave a speech to encourage UK teenagers study engineering.

I also love being able to learn about multiple cultures. We have colleagues from all around the world here, so you find out things about their culture that are not exactly same as what you learned from the books. Every month in the office we have a “snack & chat” based on festivals or food from different countries and this helps us understand each other’s culture more easily.

When I joined Sondrel I had no idea about what physical design is all about. After some training and learning from colleagues and managers I have built confidence and I have already taped out on five successful projects.

From Graduate to Engineer – Will Thomas

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I graduated in 2015 and was really interested in embedded software when I visited the stand at the careers fair. It looked really exciting with lots of opportunities and interesting projects to work on with different clients all over the world. The people I spoke to were really passionate about their work too.

I had studied Electronic and Computer Engineering at the University of York and was a little apprehensive about moving to a new area straight out of university but I got settled in quickly and got stuck into work really easily. The team were really welcoming and helped me get up to speed with the ongoing projects. I had a mentor assigned to help me become familiar with the new processes and tools that we use. That made it easy to get quick feedback and help with any issues.

I've been with the team for just over four years now. I really like the embedded silicon field; it's constantly changing year on year with exciting new project opportunities in different areas always around the corner. Amongst the people I studied with at university, most ended up in a completely unrelated field. The couple of them that stayed in engineering mostly started on graduate schemes like this one. Over time I've started to take more ownership of some of the drivers that I have been involved in developing.

If I look back I've actually come a really long way from someone fresh out of university and I'm continually moving forward at my own pace which is great.

The welcoming nature of the office and activities organised by the social committee such as pool tournaments and team meals at local pubs/restaurants really made the transition from student life into working here easy. I like getting involved in the social activities. Last week we had an after work pool tournament with pizza and this time I nearly made it through to the final. There is a planned bowling event in a few weeks too which should be fun. These things also make it easier to get to know people who work in the same office but on different projects and it makes the atmosphere really friendly.

Should I apply?

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Desire to work at the leading edge of technology

Inquiring mind

Thirst to learn and develop new skills

Love solving problems

Enjoy being part of a team

Want hands-on experience early on

Keen to try different areas of IC engineering

Want to share knowledge with your peers

Be on a relevant degree course

Expecting a 2:1 degree or above

You must have the right to work in the UK to apply

If this sounds like you then please apply!

Application Process & Timeline

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To apply, please email G2021@sondrel.com including the following:

Your Name	Phone Number	Degree Course	University

Please explain in your application how you are a good fit for this graduate scheme. You may optionally attach additional material that gives us more of an insight into your personality and skills, such as a CV or details of any societies or events that you have taken part in both inside and outside of university. You could also tell us about your final year project and why you selected it.

Finally, if you can find and crack the secret code held somewhere in this brochure you will be instantly shortlisted, just email G2021@sondrel.com with the answer!

Application window opens	Shortlisting	Assessment Days	Offers to be made	Familiarisation Day	Start of Graduate Programme
September 2020	Commencing October 2020	January-April 2021	April-May 2021	July 2021	September 2021

G2021@Sondrel.com

https://www.sondrel.com/graduate

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