

## Empreses on pots fer el PFC

### Empreses i Institucions que ofereixen projectes a l'ETSETB i que gestiona l'escola Última actualització: 22 Octubre 2008

Quan demaneu una plaça mitjançant l'Intranet, ho haureu de fer en referència al codi que surt a la taula.

ATENCIÓ: hi ha empreses que continuament estan ofertant projectes. Un dels requisits és que els has de sol·licitar pel teu compte, però pots demanar-nos qualsevol document que et sol·licitin i tingui a veure amb l'escola. Consulta aquí quines són.

BERTRANDT


Thales Nederland Land & Joint BV

EPFL

## BERTRANDT

### Bertrandt AG (Alemanya-Gaimersheim)

Codi	D BER Gaim-1
Data d'entrada	13/10/08
Tipus d'estada	PFC
Descripció	<p><b>Elaboración y Programación Maqueta de Validación y Simulación de Centralitas Puerta PQ25/PQ35 para Automoción</b></p> <p>El proyecto se realizará en colaboración entre SEAT y Bertrandt AG, con una estancia inicial en las instalaciones de Bertrandt en Gaimersheim (Alemania) para la elaboración y programación de la maqueta y una estancia posterior en las instalaciones del Centro Técnico de SEAT para la generación de la rutina de testeo.</p> <p>Fase 1: Elaboración del sistema de validación e interface de control de la maqueta. Lugar de realización: En Bertrandt Gaimersheim – Alemania.</p> <p>Fase 2: Generación de rutina para testeo automatizado de varios niveles de SW y parámetros. Lugar de realización: En Bertrandt AG – Martorell (Barcelona).</p>
Durada	Mínimo 6 meses, máximo 1 año
Requisits	Estudiante de Ingeniería Electrónica o de Ingeniería de Telecomunicación. Conocimientos de inglés nivel alto y, si es posible, alemán. Ofimática nivel usuario. Conocimientos de programación.
Nombre de places	1

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## Thales Nederland Land & Joint BV


### Thales Nedreland Land & Joint BV (The Netherlands-Huizen)

Codi	NL THALES Hui-1
Data d'entrada	17.10.08
Tipus d'estada	PFC
Descripció	<p><b>GPS navigation without satellites for wearable systems</b></p> <p>Thales Land &amp; Joint Systems in Huizen has developed CIM (Communication and Information Module) as part of the programme Dutch Soldier of the Future. CIM can be compared to a Tom Tom navigation system, but for soldiers. A civil version, for police or firemen is also available. It is in the civil version of CIM where this "stage" takes place, as emergency services are often faced with missions inside buildings.</p> <p>GPS signal reception inside buildings is weak or completely blocked, thus other ways of obtaining position information must be developed. Thales has some accumulated knowledge on the topic. This allows for a quick learning process in the concepts of inertial navigation and dead reckoning. The goal of the internship is to generate a state of the art study on available techniques and to demonstrate how (in) accurate such a system can be by means of working demo software. The demonstration shall be with real hardware and software. The latest developments have made available integrated platforms with gyroscopes and accelerometers, which shall provide for a good platform on which to develop the demo application.</p> <p>You will be responsible for the definition (project plan and architecture), implementation (SW and HW) and demonstration of your project (PFC).</p>
Durada	6 to 10 months
Requisits	Technically, you shall have solid basic knowledge of networking technologies (IP, TCP/UDP, Ethernet, Wi-Fi, ATM, DNS, DHCP, ...) and software (specifically, C or C++ or Java). You should also be familiar with the Linux operating system. Other concepts you should be familiar with are application protocols such as VoIP (SIP, i.e) and streaming (RTSP, i.e.). Fluent in English, spoken and written.
Nombre de places	1

Codi	NL THALES Hui-2
Data d'entrada	17.10.08
Tipus d'estada	PFC
Descripció	<p><b>Minimisation of transmit power in ad-hoc networks</b></p> <p>For personal communication systems, energy consumption must be minimized: a more efficient use of energy will reduce the weight and the volume of the equipment and will prolong the lifetime of the network. Batteries are responsible for about half of the volume and a significant portion of the weight of the equipment. As transmission power is an important contributor to the energy consumption of a device, one of the questions is to minimize the total transmission power assigned to nodes in a network. It seems that the question of total minimisation of total transmission power, with the restriction that the 'diameter' (i.e., the maximum distance from a source to a destination) in the resulting network is 'short' (e.g. at most 1 or 2 hops) has been less well studied. Goal of the assignment is to (a) develop algorithms for minimizing the transmit power in networks, under the restriction that the diameter of the resulting network is low; (b) analyse the performance of the developed algorithms by comparing the algorithm results to optimal solutions for networks of small diameter; (c) to implement an algorithm in an example network of sensor nodes.</p>
Durada	6 to 10 months
Requisits	Telecommunication or Electronic Engineering. Analysis of algorithms, mathematics, programming, datanetworking. Fluent in English, spoken and written.
Nombre de places	1

Codi	NL THALES Hui-3
Data d'entrada	17.10.08
Tipus d'estada	PFC
Descripció	<p><b>Adaptive Streaming Video over Wireless networks</b></p> <p>The increase in available network bandwidth brings end-users the possibility of transmitting and receiving almost live video streams. But the bandwidth available is variable, being affected by the mobility of the users, the weather, buildings, etc. With the goal of always reaching the best capacity possible among all users, at the highest quality with minimum delay, video sender and receiver can communicate to each other network parameters and experienced quality (lost frames, delay, etc.). With this information, the sender can adjust the video stream quality and the receiver can also adjust some of the reception parameters, such as the amount of buffering needed. The goal is: to study which are the most important parameters that affect the video quality, given a particular scenario; search for best realizable solutions (algorithms, techniques, ...); realize a demonstrator with real equipment of an adaptive streaming video system.</p>
Durada	6 to 10 months
Requisits	Telecommunication and datanetworking. Programming in C/C++, Linux, TCP, IP, Communication Networks. Fluent in English, spoken and written.
Nombre de places	1

You will find further information about these positions on the Internet:  
<http://test.thales-nederland.nl/pages/vacancies/internships/popup-huizen.php>

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## EPFL

### EPFL -LBD- (Suïssa-Lausanne)

Codi	CH LBD Lau-1
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>Html Obfuscator</b></p> <p>Design and implement php &amp; javascript transformations to difficult the task of web crawlers. Web crawlers are very useful tools to index and extract information from websites. However, there are cases in where users should not be allowed to crawl concrete websites. To protect from crawlers, there exists html and javascript obfuscators, which mainly tidy the source code, rename variable and function names, and write the HTML DOM document dynamically with javascript code. While this transformation is enough in some cases, it can still be easily circumvented (for instance, by programatically asking a web browser such as Firefox to open a web page and extract the information after the browser has itself executed the javascript code). The project consist in providing new types of web transformations, so that the visual apperance of the web page is the same for the user, but different with respect to the HTML DOM object. Tasks: 1. Familiarize with current html obfuscators. 2. Design and implement (with PHP/javascript) new types of web transformations. 3. Report.</p>
Durada	6 months
Requisits	PHP, Javascript and DHTML

Nombre de places	1
Codi	CH LBD Lau-2
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>Semi-Automatic Interapplication Communication</b></p> <p>Design and implement a simple alternative to semantic web languages. The objective of this project is to design and implement a more flexible interprocess communication paradigm, where computer and human communication are interleaved in order to complete a task. That is, a person can ask the PA to automatically buy a flight ticket according to his recorded preferences. In the case the airline company has changed part of the search and buying procedure (such as the removal of the predefined payment system), the user may be asked to take over the communication to address the changed part of the procedure (e.g. filling a web form to specify the payment details for the new system), after which the PA can take over the communication again with the normal procedure. In this way, the communication is interleaved between the PA and the user, making the procedure more or less automatic as needed.</p> <p>Making a system more flexible and less robust is actually the reason of the success of the Web: the Web required only unidirectional links rather than bidirectional ones. This made it possible for someone to link to another resource without action by the owner of that resource, but in turn presented the chronic problem of dead links (more flexible, but less robust system). The student will need to design a system that allows this type of interleaved communication. You will also need to implement some concrete examples.</p> <p>Tasks:</p> <ol style="list-style-type: none"> <li>1. Familiarize with existing interapplication communication, such as Apple Events and XML-RPC.</li> <li>2. Design the system.</li> <li>3. Implement a concrete example. You may need to create a plug-in for a web browser (such as Firefox) and/or for a chat software (such as Tkabber).</li> <li>4. Evaluate the system.</li> <li>5. Report.</li> </ol>
Durada	6 months
Requisits	C/C++ or Java
Nombre de places	1
Codi	CH LBD Lau-3
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>Mining global terrorism data</b></p> <p>The Global Terrorism Database (GTD) is an open-source database including information on terrorist events around the world since 1970. The project consists in applying data-mining and visualization techniques to get more insight about the domain.</p>
Durada	6 months
Requisits	Databases, Java or C++
Nombre de places	1
Codi	CH LBD Lau-4
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>Extended Regular Expression Library</b></p> <p>Extend regular expressions libraries (C, Java and PHP) for recursion and tree grammars.</p>
Durada	6 months
Requisits	Java, PHP, C
Nombre de places	1
Codi	CH LBD Lau-5
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>MicroPayments Platform</b></p> <p>Current web payment systems are not suitable for transferring very small amounts of money, such as 0.001 CHF. Thus, it is currently not possible to ask users to pay so little for small services such as searching once in a catalog of apartments. Instead, they are asked to pay a monthly subscription, which may be too expensive if the user needs only very few queries. This project consists in designing and developing a platform targeted to micropayments, with the corresponding website and web API.</p> <p>Tasks:</p> <ol style="list-style-type: none"> <li>1. Familiarize with payments systems, such as PayPal and MoneyBookers.com.</li> </ol>

	2. Design the platform. 3. Implement. 4. Report.
Durada	6 months
Requisits	Web developing
Nombre de places	1
Codi	CH LBD Lau-6
Data d'entrada	22.10.08
Tipus d'estada	PFC
Descripció	<p><b>Catalog User Interface with GTK + or Ms Visual Studio</b></p> <p>Developing a catalog query system for WinXP, Unix and MacOSX. Electronic catalogs guide the user to select a product from a possible huge set of possibilities. There are several type of systems such as Example Critiquing, Collaborative Filtering and ranked lists. They have designed a system in Java called ECatalog for preference-based and trade-off exploration. This project consists in developing a similar application, using GTK+ or Ms Visual Studio.</p> <p>Tasks:</p> <ol style="list-style-type: none"> <li>1. Familiarize with SQL.</li> <li>2. Implement the system.</li> </ol>
Durada	6 months
Requisits	C++& GTK+ or Ms Visual Studio
Nombre de places	1