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BCS Fellow application

To apply to become a Fellow of BCS, please complete and submit this form to us as a PDF – along with your CV and details of your supporter – by following the **Apply now** link at[bcs.org/fellowship](https://www.bcs.org/membership-and-registrations/become-a-member/bcs-fellowship/).

# Identify your route to BCS Fellowship

Select one of the following options by placing an **X** in the relevant box.

|  |  |  |
| --- | --- | --- |
| **Accredited route**  Do you hold a professional certification accredited for BCS Fellow? |  | Complete sections  1, 2 and 4 |
| **Experiential route**  Demonstrate your experience as a thought leader through written examples. | x | Complete sections  1, 3 and 4 |

# Section 1: Personal details

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Title |  | First name | Rahul Deo | | Surname | Vishwakarma | |
| Email |  | | | BCS membership no.  (If applicable) | | |  |

To ensure a thorough assessment of your application, our assessors may need to contact you for further information via virtual call. By providing your consent, you acknowledge and agree to allow our assessment team to reach out to you using the contact information provided in your application. This communication will involve requests for clarification on certain criteria, aimed at enhancing our understanding of your qualifications and/or experience.

Please confirm your acknowledgment by selecting one of the following options:

I consent to potential further contact with an assessor.

I do not consent to potential further contact with an assessor.

# Section **2: BCS Accreditation**

This section is for the accredited route only. See the [application guidance](https://www.bcs.org/media/8826/fellow-applicant-guidance.pdf) for a list of accredited qualifications.

If you do not have a BCS Fellow accredited certification move onto section 3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The organisation I work for |  | | | |
|  | | | | |
| Accredited Certification title |  | | Valid until |  |
| My certification can be verified here.  (URL) | |  | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title of additional evidence |  | | Valid until |  |
| My evidence can be verified here.  (URL) | |  | | |

# Section 3: Your experience

Please use the sections below to provide written evidence of your professional experience against **four** Fellowship sub-criteria, as follows:

* one from **Body of work** (what you do/have done)
* one from **Professional impact** (what did/do you contribute to the information technology profession)
* one additional sub-criterion from either **Body of work** or **Professional impact** which has not yet been evidenced in your application (e.g. if you've already provided a statement under *Responsibility*, your additional statement must cover a different criterion).
* one from **Standing in the community** (your reputation)

Please ensure you use the STAR technique to structure all of your statements (see [application guidance](https://www.bcs.org/media/8826/fellow-applicant-guidance.pdf) for more details).

## A: Body of work

Select **one** sub-criterion by placing an **X** in the relevant box, then provide your written evidence below (approximately 400 words).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Invention and innovation | X | Responsibility |  | Skills development |  |
| Entrepreneurship |  | Research |  | Consultancy |  |
| As a professional deeply immersed in innovations, I confronted a substantial challenge: addressing the evolving needs of data protection in a rapidly changing digital environment at Dell Technologies. It was marked by an increase in cyber threats, demanding a bullet proof approach to safeguarding data and systems. It was the right moment to address data breaches on a global scale in Enterprise Data Storage.  Recognizing the urgency at work, I designed the solutions addressing data security. Leveraging my extensive patent filing experience—[100+ patent applications](https://patents.google.com/?inventor=%22Rahul+Deo+Vishwakarma%22,Rahul+Vishwakarma&num=100&sort=new&dups=language&clustered=true) and [46 granted in the U.S](https://idiyas.com/inventor/badge/rahul-deo-vishwakarma).—I uniquely led the charge. I led and collaborated with Dell China while working in India. The goal was explicit: pioneer technologies reshaping data protection, establishing a new industry benchmark for data security.  To address the storage security in the product, I presented my solution to the Engineering Director, and I filed [U.S. Patent 11,513,931](https://patentimages.storage.googleapis.com/ca/15/96/e851259d050599/US11513931B2.pdf), an innovation implemented in [the Dell Power Protect Data Domain](https://www.dell.com/en-us/dt/data-protection/powerprotect-backup-dd-appliances/powerprotect-dd-backup-appliances.htm). My approach involved rigorous validation in the actual product environment and soliciting valuable customer feedback were integral components of the process. Employing my adept leadership and influencing skills, I collaborated harmoniously with cross-functional teams to guarantee the smooth assimilation of the invention into existing systems. Moreover, I took a proactive stance in engaging with stakeholders, cultivating a culture of innovation within the organizational framework. This multifaceted approach not only addressed storage security concerns but also laid the groundwork for a dynamic and forward-thinking environment, fostering continuous innovation and improvement.  The tangible impact of this initiative speaks volumes. The U.S. Patent 11,513,931 has been granted and been successfully implemented in the Dell Power Protect Data Domain (the product makes millions in revenue). This innovation has set a new standard for data protection in the enterprise industry, with wide-ranging implications for research, business processes, and system designs. Beyond the accolades of being recognized as a top U.S. patent filer, the real success lies in the tangible benefits this invention brings to organizations globally. Based on my expertise on patent filing, I shared my knowledge and helped fellow engineers file patents. It stands as a testament to how a single inventive solution can contribute significantly to addressing a critical industry-wide challenge, making substantial strides in the ongoing battle for cybersecurity. | | | | | |

## B: Professional impact

Select **one** sub-criterion by placing an **X** in the relevant box, then provide your written evidence below (approximately 400 words).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Inspiring others |  | (Inter)national policy making |  | Mentoring and coaching | X |
| Interdisciplinary collaboration |  | Diversity and inclusion |  | Sustainability – social or environmental |  |
| Outreach |  |  |  |  |  |
| During the 5 years working at Dell Technologies, I made a significant filing of patent applications (more than 20 in a year), catching the attention of the Director. The company aimed to enhance the patent filing rate within certain teams, which prompted the Director to approach me for mentoring fellow employees to improve their patent submission process.  I was tasked with mentoring both senior and same-level colleagues, educating them on the patent process, assessing ideas to patent eligibility criteria, and providing guidance on the submission process. My role included utilizing their time in a quantifiable and result oriented approach and making sure the submitted patents in the committee are of high quality and should be accepted.  In response to the Director's imperative to boost the company's goal of enhancing patent filing rates, I designed and implemented the [mentoring program](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/Patent_Mentoring_2021.jpeg) which aims to systematically educate and guide colleagues from different business units, ensuring a quantifiable and high-quality patent submission. As the mentees included both senior and same-level colleagues, I designed a tailored approach. First, I identified their area of expertise and then I had a few initial sessions to educate them about the patentability of the idea and cite real-time examples on the process. I conducted in-person meetings and a few over Zoom. Later, I provided one-on-one guidance sessions, recognizing and addressing individual strengths and challenges based on questions from the patent committee. Finally, for the application to be submitted at USPTO, I helped them interact with the patent attorney meetings to explain their invention from a legal perspective.   The mentoring initiative I spearheaded proved to be a catalyst for remarkable outcomes across product development and team capabilities. Every mentored **employee** achieved a 100% success rate in submitting invention disclosures and grants by USPTO ([US011321000B2](https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/11321000)). This success enhanced collaboration within the team and fostered collaboration across diverse geographical locations, including Dell US, China, and India. Furthermore, the program's impact transcended successful patent filings, extending to the [professional growth of mentees](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/Gopal.pdf). A standout achievement was the promotion of one **mentee** from Senior Principal Engineer to Distinguished Member of Technical Staff, with patents ([US011709738B1](https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/11709738)) serving as a key criterion for advancement. This success story contributed to cultivating a more innovative and collaborative work environment such as Hackathons. Based on my learning during the phase of mentorship, I wrote and published a book - "[Conformal Prediction: An Inventor’s Approach](https://www.amazon.com/gp/product/B0CV3X1PFF/)." | | | | | |

## C: Additional sub-criterion

Select **one** additional sub-criterion from either **Body of work** or **Professional impact** by placing an **X** in the relevant box, then provide your written evidence below (approximately 400 words).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Body of work |  |  |  |  |  |
| Invention and innovation |  | Responsibility |  | Skills development |  |
| Entrepreneurship |  | Research | X | Consultancy |  |
|  |  |  |  |  |  |
| Professional impact |  |  |  |  |  |
| Inspiring others |  | (Inter)national policy making |  | Mentoring and coaching |  |
| Interdisciplinary collaboration |  | Diversity and inclusion |  | Sustainability – social or environmental |  |
| Outreach |  |  |  |  |  |
| There was a lack of academic research exploring the application of "Conformal Prediction" in both the academia (United States) and at Dell Technologies. Identifying this gap, I focused on risk-sensitive machine learning applications, i.e., uncertainty quantification for machine learning in both industry and academia. This necessitated collaboration across various departments and geographical locations, aiming to evaluate the potential financial impact of inaccuracies in decision-making for businesses.  The objective was to address the existing research gap in the application of machine learning for informed decision-making across various business sectors, with the goal of enhancing potential revenue. A key success criterion for the research involved achieving widespread acceptance within the community, evidenced by the integration of research findings into machine learning-based products and publication in reputable international conferences focused on industry.  I identified existing products within the organization utilizing machine learning and engaged with department heads across various business units and put forward my proposal for proof of concept demonstrating how machine learning could enhance performance and business outcomes. This process involved understanding the conference venues for paper submissions, subject to approval from management. For my initial research contribution, forming the basis for subsequent outcomes, I received a travel grant from Dell. This enabled me to present the work at [SNIA SDC 2019](https://www.youtube.com/watch?v=T-hG1JyAk4E&t=7s) in San Francisco as lead author. Post-conference, collaborating with fellow researchers in the industry, I transitioned from research to implementing outcomes in domains like cloud-based data storage, design of data protection policies, thermal management of servers, and reliability analysis of hardware failures. Simultaneously, in academia, I concentrated on addressing the research gap in detecting "evolving" hardware trojans. The outcomes of this work were published at a [top-tier hardware security conference](https://ieeexplore.ieee.org/abstract/document/10323655) (23% acceptance), and also in [SYSTOR](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/SYSTOR.pdf), [KDD](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/KDD.jpeg), [IEEE Access](https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10311558), [DATE](https://arxiv.org/abs/2401.09479).   The impact of my research work is underscored by notable recognitions (#[10 inventor in Long Beach, CA](https://idiyas.com/inventor/badge/rahul-deo-vishwakarma)) and acknowledgments across the industry and external collaborations with academia. One of my [patents](https://patentimages.storage.googleapis.com/77/a9/eb/7ec595df1888d4/US11513931.pdf) was implemented in Dell Power Protect The work in the diversion domain attracted citations from competitors in the industry, for example, handling [backup failures](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=F2eTslkAAAAJ&citation_for_view=F2eTslkAAAAJ:SeFeTyx0c_EC) was cited by [Fujitsu Limited](https://patentimages.storage.googleapis.com/37/d8/71/14e846591a0361/US20220215030A1.pdf), [RedHat](https://patentimages.storage.googleapis.com/1a/32/a1/a021d62a2cf8ad/US20220129170A1.pdf), and [Commvault Systems](https://patentimages.storage.googleapis.com/b8/6c/c2/a3e11579a2fe95/US20220108167A1.pdf). The domain of [thermal management for device cooling](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=F2eTslkAAAAJ&cstart=20&pagesize=80&citation_for_view=F2eTslkAAAAJ:L8Ckcad2t8MC) was cited by [Meta Platforms Technologies LLC](https://patentimages.storage.googleapis.com/cf/a0/aa/7f1a9ad6b1dbc1/US11886259.pdf). Work on [predicting hardware failures](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=F2eTslkAAAAJ&cstart=20&pagesize=80&citation_for_view=F2eTslkAAAAJ:4OULZ7Gr8RgC) was cited by [Kyndryl, INC](https://patentimages.storage.googleapis.com/91/b0/57/7916e92fbf736f/US11409588.pdf). [Disk device failure](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=F2eTslkAAAAJ&cstart=20&pagesize=80&citation_for_view=F2eTslkAAAAJ:zA6iFVUQeVQC) cited by [IBM](https://patentimages.storage.googleapis.com/a7/ee/b5/df25036b73d335/US11176019.pdf), and [DNA Based data storage](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=F2eTslkAAAAJ&citation_for_view=F2eTslkAAAAJ:8k81kl-MbHgC) was cited by [ACS NANO](https://pubs.acs.org/doi/full/10.1021/acsnano.2c06748) (Cavendish Laboratory, University of Cambridge). In the industry, I was a frequent speaker at SNIA SDC and delivered 8 Talks from 2019 - 2023 ([YouTube](https://www.youtube.com/playlist?list=PLDqvvIThxoueOJyjtLx-ldMjQihLisKNa)). The citations, talks, and inventor ranking provided both qualitative and quantitative proof of the impact resulting from the research outcomes. This reflects a successful research career and underscores the practical impact and recognition attained in both industry applications and academic contributions. | | | | | |

## D: Standing in the community

Select **one** sub-criterion by placing an **X** in the relevant box, then provide your written evidence below (maximum 400 words).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Awards | X | Governance |  | Public influencer |  |
| Assessor |  |  |  |  |  |
| I received multiple awards in recognition of my achievements, including the University Achievement Award for Outstanding Graduate Student, National Science Foundation (NSF) Student Travel Grant, Design Automation Conference (DAC) Young Fellows Program, CSULB ASI Student Travel Fund, Dell Technologies Patent Awards, IEEE Senior Member status, and Patent Milestone Awards.  The task was to provide clear evidence of how these awards have impacted my ability to influence the profession and support my career. The awards ranged from academic recognition to industry patents and fellowships.  In strategizing my approach to garnering awards, I meticulously planned actions that spanned both academic and corporate spheres, reflecting a commitment to excellence. The [University Achievement Award](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/University_Achievement_Awards_CSULB.pdf) recognized my dedication as an outstanding graduate student (out of 5500 students), showcasing proficiency in research, scholarly, and creative activities. My strategic pursuit continued with the [NSF Student Travel Grant](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/HOST.pdf), securing $1200, which enabled me to present my research globally at international conferences, expanding my academic influence. The [DAC Young Fellows](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/DAC.pdf) Program further enhanced my visibility, providing an award of $1100 for participation in the 60th Design Automation Conference in San Francisco. Simultaneously, the [CSULB ASI Student Travel Fund](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/ASI.pdf), amounting to $900, supported my engagement in conferences and academic events. The [Patent Milestone Award FY20](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/Milestone_Award_FY2020_Patent_Filing.jpeg) celebrated my achievement of securing over 20 patents at Dell Technologies, emphasizing a pattern of consistent innovation.  Securing travel grants, such as the NSF Student Travel Grant and DAC Young Fellows Program, allowed me to present my research globally, elevating my academic standing and fostering collaborations. The [Dell Technologies Patent Awards, totaling $255,610.00](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/Patent_Award.PNG), signifies financial recognition and propelled my career to leadership positions, emphasizing the practical relevance and innovation of my work within the corporate landscape. Furthermore, recognition as an [IEEE Senior Member](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/IEEE.pdf) quantifiably acknowledges my contributions to the IEEE community and also empowered me to actively contribute to the professional growth of fellow members by evaluating their applications. Being recognized as the [Top Patent Filer](https://github.com/rahvis/rahvis.github.io/blob/main/files/BCS/award_sandeep.pdf) across APJ, EMEA, and LATAM at Dell Technologies in FY21 demonstrates my sustained commitment to innovation, serving as tangible evidence of my influence in both academic and industrial realms. These awards profoundly impacted my career progression and the broader professional community. They validate the significance of my work, representing pivotal milestones in a journey marked by impactful contributions and innovations. | | | | | |
| URL to further evidence  *(Optional; one URL only)* | | <https://www.linkedin.com/in/rahulvishwakarma/> | | | |

# Section 4: Public recognition

If your Fellowship application is successful, we’d like to publicly recognise your achievement on our website and in other celebratory communications.

(These comms would feature your name but no contact details.)

|  |  |
| --- | --- |
| Would you like your achievement to appear on the BCS website?  (Place an **X** in the box to accept) | X |
| Would you like to be recognised in public celebratory communications?  (Place an **X** in the box to accept) | X |

# How we use your data

We’ll store your basic personal information, such as your name and email address, so that we can process your application and communicate with you about your fellowship. This may include contact with your supporter, BCS assessors, welcome communications, and information about accessing and getting the most from your fellowship.

We’ll always keep your information safe and never pass it to a third party without your permission. Full details of our data protection and privacy policies are available online at [bcs.org/privacy](https://www.bcs.org/category/5655).