

INTISARI

DESAIN PENCEGAHAN PENIPUAN SISTEM PENILAIAN KINERJA BERBASIS BLOCKCHAIN

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Saat ini, proses rekrutmen karyawan membutuhkan banyak tahapan dan dokumen. Merupakan hal yang umum dan kerap dijumpai bahwa pelamar terkadang melebih-lebihkan atau memalsukan data riwayat pekerjaan. Efek pemalsuan data ini dapat menempatkan perusahaan dan unit kerja dalam risiko hukum dan kerugian komersial yang signifikan. Perusahaan yang sedang merekrut karyawan umumnya (*recruitment company*) mempekerjakan agen rekrutmen pihak ketiga untuk melakukan verifikasi keaslian riwayat pekerjaan pelamar. Namun, mempekerjakan agen rekrutmen pihak ketiga memakan waktu dan biaya yang tidak sedikit. Hal ini juga membuat perusahaan terlalu bergantung pada agen pihak ketiga yang mungkin tidak sepenuhnya dapat dipercaya dan menyebabkan beberapa risiko lainnya.

Perusahaan lama dari pelamar (*former company*) umumnya menggunakan surat pengalaman kerja (*statement of service / experience letter*) sebagai bukti dokumen riwayat pekerjaan karyawan. Namun, proses penerbitan surat pengalaman kerja sarat akan potensi konflik kepentingan antara perusahaan dan karyawan. Di beberapa negara dan daerah, penerbitan surat pengalaman kerja bukanlah hal yang wajib dilakukan oleh perusahaan.

Dalam penelitian ini, kami mengajukan pendekatan sistem yang dapat memverifikasi riwayat data pekerjaan pelamar dengan menggunakan penilaian kinerja (*performance appraisal*) sebagai bukti riwayat data pekerjaan, dan memanfaatkan Blockchain sebagai sistem penyimpanan data dan sistem verifikasi yang aman dan (*real-time*). Pendekatan yang diajukan juga mampu meminimalkan masalah kepercayaan dan data privasi dengan menambahkan skema enkripsi dan tanda tangan digital menggunakan metode algoritma *Elliptic Curve Cryptography* (ECC). Selanjutnya, kami telah membangun prototipe untuk menunjukkan bagaimana sistem yang diusulkan bekerja menggunakan Consortium Blockchain berbasis quorum.

Kata-kata kunci : Blockchain, Algoritma Kriptografi Kurva Eliptik, Hashing, Riwayat Pekerjaan, Penilaian Kinerja.

ABSTRACT

ON THE DESIGN OF A BLOCKCHAIN-BASED FRAUD-PREVENTION PERFORMANCE APPRAISAL SYSTEM

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Currently, the job recruitment process takes a lot of process steps and needs several applicant documents. It is very well known for job applicants to exaggerated, misrepresent, or falsify their work experiences, skills, performances, and other past employment data histories. The effect of falsifying data of job applicants may put a company at legal risk and significant commercial losses.

Generally, companies as a recruiter use third-party Human Resources recruitment agencies to dealing with the process of verifying job applicant's employment history by checking and confirming job applicants' work history experience letter. However, involving third-party (HR) recruitment agencies is time-consuming and costly which may not convenient for all companies, especially for small companies. Additionally, it makes companies depend too much on third-party agencies which may not trustworthy and cause several other risks. Many companies use experience letters as proof of work history documents of their employee. However, the process of publishing an experience letter may involve unfair judgement and may contain conflict of interest between company and employee. Yet, publishing an experience letter is not mandatory for former companies in several countries and regions as it is not under their Government regulation.

In this research, we propose a system to verify past employment data histories by using performance appraisal as proof of work history and utilizing Blockchain to provide a cost-effective, secure system, tampered-proof and real-time work history verification. The proposed approach also able to minimizes trust issues and privacy of data sharing by adding several encrypt and digital signature schema using Elliptic Curve Cryptography (ECC) algorithm. Furthermore, we have implemented a prototype to demonstrate how the proposed system work using a Quorum-based consortium blockchain.

Keywords : Blockchain, Elyptic Curve Cryptography Algorithm, Hashing, Work History, Performance Appraisal.