Cryptography Using Chebyshev Polynomials

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Public Key Cryptosystems Using Chebyshev Polynomials Based ...

Abstract: Chebyshev polynomials have been recently proposed for designing public-key systems. Indeed, they enjoy some nice chaotic properties, which seem to be suitable for use in Cryptography. Moreover, they satisfy a semi-group property, which makes possible implementing a trapdoor mechanism.

Public-key encryption based on Chebyshev polynomials over ...

1.1 Our contribution. Our present article devoted to new construction of secure IBC model using subtree (ST) and fuzzy-entity data sharing for PKC based on Chebyshev chaotic maps by using conversion mechanism that can convert the PKC's

using Chebyshev chaotic map into the IBC technique instead of reexamine another technique.

Practical Cryptography

function using Chebyshev polynomials is more accurate in approximating polynomial functions. Keywords: Sturm-Liouville boundary value problem, Chebyshev di erential equation, Chebyshev polynomials, generating function, recursive formula, orthogonality, Parseval's identity. R esum e

The application of modified Chebyshev polynomials in ...

Cryptography using Chebyshev polynomials 2004.] 2 Optimality of Chebyshev Polynomials There's only one bullet in the gun. It's called the Chebyshev polynomial. { Rocco Servedio via Moritz Hardt (Zen of Gradient Descent blog post). It turns out, that the optimal jump polynomials are given by the Chebyshev polynomials (of the rst kind).

Cryptography Using Chebyshev Polynomials

Cryptography using Chebyshev polynomials G. J. Fee and M. B. Monagan Centre for Experimental and Constructive Mathematics, Simon Fraser University, Burnaby, Canada, V5A 1S6 gfee@cecm.sfu.ca and mmonagan@cecm.sfu.ca Abstract We consider replacing the monomial xn with the Chebyshev polynomial T n(x) in the Diffie-Hellman and RSA cryptography ...

Chebyshev polynomials - Wikipedia

A newly proposed public key crypto method based on Chebyshev polynomials [16] recommend a new approach to data encryption. This paper provides an overview of three major types of public key cryptosystems mainly Diffie-Hellman Key Exchange Algorithm, the RSA Cryptosystem, the ElGamal Encryption Method and their implementation using Chebyshev Polynomials.

Public-Key Encryption Based on Chebyshev Polynomials ...

Security and Communication Networks / 2019 / Article. Article Sections. ... There are many proposed results using cryptography primitives to make a reasonable user authentication scheme. ...

This paper proposes a Chebyshev polynomials-based scheme in client-server environment.

Cryptography using Chebyshev polynomials

Chebyshev polynomials based public key cryptosystem (CPPKC), as a kind of chaos based cryptography, , [6], [14]- [17] key of CPPKC can guarantee the security even for small integer, so there is no ...

[cs/0411030] Security of public key cryptosystems based on ...

Public key cryptography using Permutation P-Polynomials over Finite Fields Rajesh P Singh1 B. K. Sarma2 A. Saikia3 Department of Mathematics Indian Institute of Technology Guwahati Guwahati 781039, India Abstract In this paper we propose an efficient multivariate public key cryptosystem based on permutation p-polynomials over finite fields.

Cryptanalysis of Multiplicative Coupled Cryptosystems ...

More on Security of Public-Key Cryptosystems Based on Chebyshev Polynomials

Security of public-key cryptosystems based on Chebyshev ...

Encryption algorithm based on Chebyshev polynomials over finite fields Recently, a public-key encryption algorithm based on Chebyshev polynomials over prime finite fields was pro- posed [6]. In addition to the semigroup property, the pseudo-randomness of these polynomials is an attractive feature for cryptographical purposes.

Chebyshev chaotic map-based ID-based cryptographic model ...

Abstract: Chebyshev polynomials have been recently proposed for designing public-key systems. Indeed, they enjoy some nice chaotic properties, which seem to be suitable for use in Cryptography. Moreover, they satisfy a semi-group property, which makes possible implementing a trapdoor mechanism.

(PDF) The application of modified Chebyshev polynomials

in ...

CiteSeerX - Document Details (Isaac Councill, Lee Giles, Pradeep Teregowda): We consider replacing the monomial xn with the Chebyshev poly-nomial Tn(x) in the Diffie-Hellman and RSA cryptography algorithms. We show that we can generalize the binary powering algorithm to com-pute Chebyshev polynomials, and that the inverse problem of com-puting the degree n, the discrete log problem for Tn(x ...

[PDF] Cryptography using Chebyshev polynomials | Semantic ...

The application of modified Chebyshev polynomials in asymmetric cryptography Based on Chebyshev polynomials, you can create an asymmetric cryptosystem that allows secure communication. Such a cryptosystem uses the fact that these polynomials form a semi-group due to the composition operation.

Chebyshev Polynomials and Approximation Theory in ...

PDF | Based on Chebyshev polynomials, you can create an asymmetric cryptosystem that allows secure communication. Such a cryptosystem uses the fact that... | Find, read and cite all the research ...

Improved Chebyshev Polynomials-Based Authentication Scheme ...

We consider replacing the monomial xn with the Chebyshev polynomial Tn(x) in the Diffie-Hellman and RSA cryptography algorithms. We show that we can generalize the binary powering algorithm to compute Chebyshev polynomials, and that the inverse problem of computing the degree n, the discrete log problem for Tn(x) mod p, is as difficult as that for xn mod p.

PROPERTIES OF CHEBYSHEV POLYNOMIALS - arXiv

Cryptanalysis of Multiplicative Coupled Cryptosystems Based on the Chebyshev Polynomials. Ali Shakiba, ... we discuss a chaotic instance of MCC based on the first and the second types of Chebyshev polynomials over real numbers for these three ... [2004] " Cryptography using Chebyshev polynomials," Proc. Maple Summer Workshop (MSW '04 ...

CiteSeerX — B.: Cryptography using Chebyshev polynomials

The Chebyshev polynomials are two sequences of polynomials, denoted T n (x) and U n (x).They are defined as follows. By the double angle formula, = − is a polynomial in cos(θ), so define T 2 (x) = 2x 2 − 1.The other T n (x) are defined similarly, using cos(nθ) = T n (cos(θ)).Similarly, define the other sequence by sin(nθ) = U n−1 (cos(θ)) sin(θ), where we have used de ...

Public key cryptography using Permutation P-Polynomials ...

The values were calculated using the formula for Chebyshev nodes.-0.9659: 0-0.7071: 0.0025-0.2588: 0.4476: 0.2588: 0.4476: ... can be used. There is however a tradeoff, we use approximations because they are quick to compute, and higher order polynomials take longer to evaluate. comments powered by Disqus. Contents. Runge's Phenomenon ...